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NEW SPECIES OF NORTH AMERICAN BEES OF THE GENUS *ANDRENA* FROM
WEST OF THE 100TH MERIDIAN CONTAINED IN THE COLLECTIONS
OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

BY HENRY L. VIERECK

The following descriptions are contributions toward a monograph of the Pan-American species of *Andrena*.

The proportions are in terms of divisions of a disc micrometer, with 100 divisions to 1 mm., used in a Spencer Lens Co. binocular with 10 x ocular and 40 mm. objective, each division equals nearly 42 μ .

Andrena (*Andrena*) *azygos* new species.

Type.—No. 4,010. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Cloudcroft, New Mexico, June 16, 1902 (H. L. Viereck).

Related to *A. (A.) asmi* Viereck.

Male.—Length 8.5 mm.; *body* black, mostly covered with ochreous hair; *head* with its facial line : transfacial line :: 45 : 64, axial line : temporal line :: 32 : 22, temples produced, almost right angular, the angle apparently opposite middle of eye, malar line : joint 3 of antennæ :: 3 : 7, elevated portion of malar space much shorter than the depressed portion, head covered with ochreous hairs except along the inner eye margin, upper eye margin, and outer eye margin above the middle of temples and on the front where the hairs are black, front indistinctly punctured, dullish, reticulated and finely longitudinally striate, ocellocular line : ocelloccipital line :: 14 : 5, face shining, distinctly punctured, its punctures from one to three puncture widths apart, clypeus nearly planate, clypeus apparently slightly concave near apex, more shining and more distinctly punctured than the face, not elevated directly above the apical margin, clypearea wanting, sculpture of the clypeus not hidden by the moustache, labrarea with a broad rounded emargination, polished, its width at base : length down the middle :: 7 : 3, width at base : greatest length :: 7 : 4, width at apex : length down the middle :: 6 : 3, labrarea at base apparently half as wide as the labrum, the latter with a fringe of ochreous hairs, joint 3 of antennæ : 4 :: 7 : 8, joint 4 and following joints from a little more than one

and one-half times as long as thick to nearly twice as long as thick, dullish, flagel almost straight in outline, antennæ blackish throughout, mandibles nearly typical, rather slender, extending beyond the outer edge of the labrum and nearly to end of the basal third of its fellow, black except for the apical fourth which is dull dark reddish, palpi nearly typical; *thorax* covered with an abundance of dark, dull, ochreous hairs, hairs of dorsulum seemingly shorter than hair of mesopleuræ, dorsulum dullish, finely reticulated and sparsely punctured, the punctures indistinct and from two to five or more puncture widths apart, mostly the latter, notauli represented by a shining line, mesopleuræ dullish with pale ochreous hairs throughout, finely reticulated and mostly covered with shallow pits, that are mostly three or more pit widths apart, scutell hairy and sculptured much like the dorsulum, partly polished, partly sculptured like the dorsulum, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ dark brown, polished, wing base mostly pale stramineous, subcosta blackish, stigma brownish stramineous with a blackish tinge, rest of veins stramineous with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and a little nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown excepting the tarsi and hind tibiæ which are rather dark brown, legs covered with ochreous hairs, hind metatarsi at most hardly wider than mid-metatarsi and nearly half as wide as hind tibiæ at apex of the latter; *propodeum* with its enclosure poorly defined, with irregular rugæ on basal half, finely reticulated on apical half, rounded off at apex, rest of upper face sculptured somewhat like the mesopleuræ but with smaller pits and covered with dark ochreous hair, propodeal pleuræ sculptured apparently like the mesopleuræ, the sculpture not hidden by the uniformly distributed ochreous hairs; *abdomen* with its tergum shining, almost polished, finely reticulated and indistinctly punctured, the punctures mostly three or four puncture widths apart, first tergite, with erect pale ochreous hairs, second and third tergites with appressed ochreous hairs, second tergite with its elevated portion down the middle : depressed portion :: 20 : 6, third and fourth tergites with brownish appressed hairs on the elevated portion, fifth tergite with its basal blackish portion covered with poorly defined punctures that are as many as four puncture widths apart, rest of fifth tergite and exposed portion of sixth and seventh tergites with a

stramineous margin, anal process narrow, almost parallel sided and shallowly emarginate at apex, tergum with rather inconspicuous hairs that are supplemented on the sides of the second, third and fourth tergites by thin ochreous apical hair bands, hair at apex of abdomen of a golden hue.

Andrena (Andrena) caliginosa¹ new species.

Type.—No. 4,039. The Academy of Natural Sciences of Philadelphia.

Type Locality.—San José, California. (Hold.)

Related to *A. (A.) decussata* Viereck. Probably synonymous with *A. (A.) nigra* Provancher.

Female.—Length 10.5 mm.; *body* black, covered throughout with black or blackish brown hairs; *head* with its facial line : transfacial line :: 72 : 88, axial line : temporal line :: 37 : 21, malar line : joint 3 of antennæ :: 4 : 15, ocelloccipital line : greatest diameter of lateral ocellus :: 5 : 6, elevated portion of malar space distinctly shorter than depressed portion, front rather distinctly, longitudinally striato-reticulate, not elevated into a welt along the fovea, fovea at most : ocellocular line :: 12 : 16, foveal band virtually wanting, distance between fovea and ocelli : ocellocular line :: 6 : 16, fovea gradually attenuated below its middle and continued to a point apparently above the antennal line, fovea filled with dark seal-brown hairs, face mostly nearly polished, partly indistinctly reticulate, with distinct punctures that are mostly almost adjoining or one puncture width apart, clypeus slightly elevated above the apical margin, convex, not so closely sculptured as the face, the punctures larger and well defined, clypearea present, rather poorly defined throughout, clypeus thinly hairy, its sculpture not at all hidden by hairs, labrarea subemarginate, its width at base : length down the middle :: 8 : 4, width at apex : length down the middle :: 6 : 4, greatest length : width at base :: 5 : 8, labrarea at base nearly one-third as wide as the labrum, the latter with a fringe of dark brownish hairs, labrum with a median longitudinal crista between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 15 : 10, joint 4 a little thicker than long, joint 5 a little longer than thick, succeeding joints a little longer than thick, except joint 12 which is distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending nearly to the outer edge of the labrarea, black except for the apical third which is dark reddish,

¹ This specific name was proposed for this species by Prof. W. M. Davis.

palpi nearly typical; *thorax* covered with an abundance of long slender hairs which are as long on the dorsum as on the mesopleuræ, dorsum dullish, finely reticulated, punctured, the punctures mostly from adjoining to three-puncture widths apart, notauli represented by a shining line, mesopleuræ sculptured somewhat like the dorsum but not so closely or distinctly reticulated, scutellum nearly polished but hairy and punctured much like the dorsum, metanotum hairy and sculptured much like the dorsum except that the sculpture is mostly denser and less distinct, tegulæ dark brown, polished, wing base partly blackish brown, subcosta blackish brown, stigma dark brown, rest of veins dull brownish stramineous, or blackish brown, first recurrent vein received by the second submarginal cell far beyond the middle and nearly interstitial with the second transverse cubitus, nervulus received by the median cell, nearly interstitial and forming an acute angle with the first abscissa of the discoidal vein, membrane with a uniform blackish brown tinge, legs blackish except for the small joints of the tarsi which are more or less dark brown, legs covered with black or blackish brown hairs, scopa typical, its hairs black or blackish brown throughout, hind metatarsi at most apparently a little wider than mid metatarsi; *propodeum* with its enclosure poorly defined, dullish and finely reticulated, slightly rugose at base, rest of upper face of propodeum sculptured somewhat like the dorsum but not so distinctly punctured, and covered with similar hair, propodeal pleuræ shining, reticulate, with sparse shallow punctures and almost hidden by the brownish and blackish floccus; *abdomen* with its tergum shining and sculptured much like the propodeal pleuræ but with apparently more distinct and smaller punctures from three to six or more puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergite, first, second, third and fourth tergites with an apical, blackish brown margin, second tergite with its elevated portion down the middle : depressed portion :: 18 : 10, fifth tergite shining, reticulate, its punctures closer together and coarser than on the other tergites, pygidium black, nearly planate, with a shallow furrow on each side, nearly pointed at apex, tergum with thin, inconspicuous, erect hairs that are much longer on the first and second tergites than on the third and fourth, fimbria blackish brown.

Andrena (Andrena) candida tramoserica new race.

Type.—No. 4,011. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California.

Female.—Length 10 mm.; essentially as in *A. (A.) candida* Smith from which it differs chiefly in the foveæ reaching at most to the antennal line instead of to the clypeal line as in typical *candida*. In this race there is no black hair whatever on the temples. Clypeus down the middle mostly reticulate on the basal half and mostly transversely striate on the apical half.

In a paratopotype the clypeus is almost polished on its apical half.

Andrena (Andrena) complicata² new species.

Type.—No. 4,042. The Academy of Natural Sciences of Philadelphia.

Type Locality.—San José, California. (Hold.)

Related to *A. (A.) trizonata* (Ashmead) and *A. (A.) candida* Smith, and may prove to be a race of the latter.

Female.—Length 8 mm.; *body* bluish, mostly covered with pale ochreous almost white hairs; *head* with its facial line : transfacial line :: 56 : 67, axial line : temporal line :: 27 : 16, malar line : joint 3 of antennæ :: 2 : 9, ocelloccipital line : greatest diameter of lateral ocellus :: 4 : 4, elevated portion of malar space nearly wanting, head covered with whitish and black hairs, the latter present along the inner eye margin, on most of the front, vertex and upper end of temples, and along the upper two-thirds of the outer eye margin, front rather distinctly, longitudinally striate, not elevated into a welt along the fovea, fovea at most : ocellocular line :: 6 : 13, foveal band wanting, distance between fovea and ocelli : ocellocular line :: 7 : 13, fovea nearly parallel sided, not attenuated below its middle but continued to a point apparently a little below the antennal line, fovea filled with dark seal brown hairs above the middle, with pale hairs below the middle, face mostly nearly polished, indistinctly reticulate, with indistinctly defined punctures that are mostly as many as two puncture widths apart, face with a lateral, coppery margin, clypeus slightly elevated above the apical margin, coppery and blackish with a basal bluish margin, convex, sculptured like the face except that the punctures are larger and well defined and not so close together, clypearea wanting, clypeus with its basal half shining reticulate, its apical half nearly polished, clypeus thinly hairy its sculpture not at all hidden by hairs, labrarea rounded, its width at base : length down the middle :: 10 : 3, labrarea at base a little more than half as wide as the labrum, the latter with a fringe of pale brown hairs, labrum apparently sculptureless and structure-

²This specific name was proposed for this species years ago by Prof. W. M. Davis.

less between the labrarea and apical edge of labrum, joint 3 of antennæ : $4 + 5 :: 9 : 8$, joint 4 thicker than long, the succeeding joints as thick as long or a little longer than thick except joint 12 which is distinctly longer than thick, antennæ blackish throughout, mandibles typical, extending to the outer edge of the labrarea, black except for the apical half which is mostly dark reddish, palpi nearly typical; *thorax* covered with an abundance of pale ochreous almost white hairs which are as long on the dorsulum, where they are thinly mixed with black hairs, as on the mesopleuræ, dorsulum dullish, finely reticulated and punctured much like the face, notauli represented by a shining line, mesopleuræ with almost whitish hairs except along the upper margin where there is an admixture of black hairs, sculptured somewhat like the dorsulum but more closely and less distinctly punctured, scutel hairy and sculptured much like the dorsulum except that most of its hairs are black, and the anterior margin is nearly polished, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser and less distinct and the hairs are all whitish, tegular dark brown, partly nearly polished, wing base partly blackish brown, subcosta blackish brown, stigma dark brown, its lower margin blackish, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell in or before the middle and nearly one and one-half times as far from the first transverse cubitus as the first transverse cubitus is from the stigma on the radial vein, nervulus received by the median cell, nearly interstitial and forming an acute angle with the first abscissa of the discoidal vein, membrane with a uniformly brownish tinge, legs blackish except for the small joints of the tarsi which are more or less dark brown, legs covered with whitish and golden hairs, scopa typical, its hairs silvery, the hairs at base above decidedly darkened, hind metatarsi at most apparently a little narrower than mid metatarsi; *propodeum* with its enclosure poorly defined, dullish and finely reticulated, its basal half with a few faint rugæ and a faint median longitudinal raised line, rest of upper face of propodeum sculptured somewhat like the mesopleuræ, and covered with fine pale ochreous hair, propodeal pleuræ reticulated and with sparse shallow punctures that are nearly as close together as the clypeal punctures, and almost hidden by the almost whitish floccus; *abdomen* with its tergum shining, nearly polished, feebly reticulate and finely, sparsely punctured, the punctures mostly from four to six puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, second, third and fourth tergites

with a thin, apical, whitish hair band that is interrupted in the middle of the second and third tergites, apical edge of first, second, third and fourth tergites with a pale stramineous border, second tergite with its elevated portion down the middle : depressed portion :: 16 : 8, fifth tergite shining, reticulate, its punctures coarser than on the other tergites, pygidium nearly planate, almost pointed at apex, tergum with inconspicuous, pale, nearly erect hairs in addition to the hair bands, the hairs of the sides of the first and second tergite much longer than the hairs of the succeeding tergites, fimbria dark brown.

Andrena (**Andrena**) **cristata** new species.

Type.—No. 4,012. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Nevada (H. K. Morrison).

Related to *A. (A.) moesta albihirta* (Ashmead).

Female.—Length 10 mm.; *body* black, mostly covered with pale ochreous almost white hairs; *head* with its facial line : transfacial line :: 56 : 76, axial line : temporal line :: 30 : 18, malar line : joint 3 of antennæ :: 1 : 10, ocelloccipital line : greatest diameter of lateral ocellus :: 5.5 : 5, elevated portion of malar space nearly as long as depressed portion, head covered with white hairs, front rather indistinctly, longitudinally striate, not elevated into a welt along the fovea, fovea at most : ocellocular line :: 10 : 14, foveal band present and at upper end of the inner eye margin : ocellocular line :: 1 : 14, distance between fovea and ocelli : ocellocular line :: 3 : 14, fovea attenuated below its middle where it is apparently only one-half or a little more than half as wide as the greatest width of the fovea, the latter continued to a point apparently a little below the antennal line, fovea filled with dark seal-brown hairs, fovearea wanting, vertex and temples along the upper edge of the eye with black hairs, face mostly polished, partly indistinctly reticulate, with indistinct punctures that are as many as five or more puncture widths apart, clypeus slightly elevated above the apical margin, convex, sculptured like the face except that the punctures are larger and well defined, clypearea present but poorly defined, clypeus thinly hairy its sculpture not at all hidden by hairs, labrarea subemarginate its width at base : length down the middle :: 8 : 3, width at apex : length down the middle :: 7 : 3, labrarea at base nearly half as wide as the labrum, the latter with a fringe of golden hairs, labrum with a median longitudinal crista between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 9 : 8, joints 4 and 5 thicker

than long, the succeeding joints as thick as long or little longer than thick except joints 11 and 12 which are distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrarea, black except for the apical fourth and inner edge which are clear dark reddish, palpi nearly typical; *thorax* covered with an abundance of pale ochreous almost white hairs which are as long on the dorsulum where they are darker than the almost whitish hairs on the mesopleuræ, dorsulum dullish, finely reticulated and punctured like the face but more distinctly so, notauli represented by a shining line, mesopleuræ with almost whitish hairs, sculptured somewhat like the dorsulum but not so closely or distinctly punctured, scutel hairy and sculptured much like the dorsulum, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser and less distinct, tegulæ dark brown, polished, wing base partly blackish brown, subcosta blackish brown, stigma pale brownish stramineous, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and nearly as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish except for the tarsi and hind tibiæ which are more or less dark brown, legs covered with brownish golden and ochreous hairs, scopa typical, its hairs of the lower half pale ochreous, almost white, of its upper half with a brownish hue, hairs at base above decidedly darkened, hind metatarsi at most apparently a little narrower than mid metatarsi; *propodeum* with its enclosure poorly defined, dullish and finely reticulated, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but with smaller punctures, and covered with finer pale ochreous hair, propodeal pleuræ with sparse shallow punctures and almost hidden by the almost white floccus; *abdomen* with its tergum shining and sculptured much like the face, the punctures from two to six or more puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, second, third and fourth tergites with an apical, whitish hair band that is interrupted in the middle, apical edge of first, second, third and fourth tergites with a stramineous border, second tergite with its elevated portion down the middle : depressed portion :: 16 : 9, fifth tergite shining, reticulate, its punctures closer together than on the other tergites, pygidium nearly planate, with a shallow furrow on each side, nearly pointed at apex, tergum with inconspicuous, pale, nearly erect hairs in addition to the hair bands, fimbria dark seal-brown.

Andrena (Andrena) friesei new species.

Type.—No. 4,035. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (A.) fulvhirta* Viereck and Cockerell.

Female.—Length 11 mm.; *body* black, mostly covered with bright tawny or ochreous hairs; *head* with its facial line : transfacial line :: 62 : 77, axial line : temporal line :: 31 : 19, malar line : joint 3 of antennæ :: 15 : 9, ocelloccipital line : greatest diameter of lateral ocellus :: 7 : 5, elevated portion of malar space nearly wanting, head covered with tawny and black hairs, front longitudinally striate, not elevated into a welt along the fovea, fovea at most : ocellocular line :: 10 : 15, foveal band present and at upper end of the inner eye margin : ocellocular line :: 1.5 : 15, distance between fovea and ocelli : ocellocular line :: 6 : 15, fovea attenuated below its middle, cuneiform and continued to a point well below the antennal line, fovea filled with pale hairs along the inner eye margin and lower half, and with very dark seal-brown hairs on the upper half, in addition with some blackish hairs, fovearea wanting, vertex and temples along the upper edge of the eye with black hairs, face dullish, finely indistinctly reticulate, with indistinct punctures that are mostly as many as four puncture widths apart, clypeus distinctly elevated above the apical margin, slightly convex, nearly planate, sculptured like the face except that the punctures are closer together, clypearea barely represented by a median longitudinal shining streak, clypeus thinly hairy its sculpture nearly hidden laterally by hairs, labrarea truncate its width at base : length down the middle :: 9 : 5, width at apex : length down the middle :: 5 : 5, labrarea at base nearly half as wide as the labrum, the latter with a fringe of brownish hairs, labrum apparently sculptureless and without a definite structure between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 9 : 8, joint 4 and 5 thicker than long, the succeeding joints as thick as long or a little longer than thick except joints 11 and 12 which are distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending a little beyond the outer edge of the labrarea, black except for the apical third which is dark reddish, palpi nearly typical; *thorax* covered with an abundance of tawny hairs which are as long on the dorsulum where they are darker than the almost ochreous hairs on the mesopleuræ, dorsulum dullish, covered with reddish hairs, finely reticulated and punctured like the face but not so distinctly, more closely, notauli represented by a

shining line, mesopleuræ with almost ochreous hairs, sculptured somewhat like the dorsulum, scutell hairy and sculptured like the dorsulum, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser and less distinct, tegulæ blackish brown, shining, reticulated, wing base partly blackish brown, subcosta blackish brown, stigma pale brownish stramineous bounded by dark brown veins, rest of veins dull stramineous with a blackish tinge, first recurrent vein received by the second submarginal cell in or a little beyond the middle and nearly one and one-half times as far from the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus nearly interstitial and forming an acute angle with the first abscissa of the discoidal vein, membrane uniformly tinged with brown, legs blackish, covered with brownish hairs excepting most of hind trochanters, coxæ and femora on which the hairs are rather ochreous, scopa atypical, its hairs mostly much shorter than half the greatest width of hind tibiæ and nearly erect, appearing brownish except along the edges where the hairs are pale, nearly ochreous, hairs at base above decidedly darkened, hind metatarsi presumably at most apparently a little narrower than mid metatarsi; *propodeum* with its enclosure poorly defined, dullish and finely reticulated, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but less shining, and covered with finer pale tawny hair, propodeal pleuræ with a few shallow punctures, finely reticulated, and almost hidden by the ochreous floccus; *abdomen* with its tergum dullish, appearing almost impunctate, the punctures mostly from two to four puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, second, third and fourth tergites with an apical, whitish hair band that is interrupted in the middle of the second and third, apical edge of first, second, third and fourth tergites with a whitish stramineous edge, second tergite with its elevated portion down the middle : depressed portion :: 18 : 9, fifth tergite more shining, reticulate, its punctures distinct compared with the punctures on the other tergites, pygidium nearly planate, nearly pointed at apex, tergum with inconspicuous dark appressed hairs, in addition to the hair bands, except laterally on the first and second tergite where there are some whitish nearly erect hairs, fimbria dark seal-brown.

***Andrena* (*Andrena*) *inclinata*³ new species.**

Type.—No. 4,033. The Academy of Natural Sciences of Philadelphia.

³ This specific name was applied to this species by Prof. W. M. Davis in the seventies of the preceding century.

Type Locality.—California. (No further data.)

Related to *A. (A.) fulvihirta* Viereck and Cockerell.

Female.—Length 12 mm.; *body* black, abdomen with a faint greenish tinge, mostly covered with pale ochreous or whitish hairs; *head* with its facial line : transfacial line :: 70 : 89, axial line : temporal line :: 35 : 21, malar line : joint 3 of antennæ :: 2 : 11, ocellocapital line : greatest diameter of lateral ocellus :: 6 : 5, elevated portion of malar space in part nearly as long as depressed portion, head covered with whitish hairs, front rather distinctly, longitudinally striate and finely reticulate, not elevated into a welt along the fovea, fovea at most : ocellocular line :: 9 : 18, foveal band present and at upper end of the inner eye margin : ocellocular line :: 2 : 18, distance between fovea and ocelli : ocellocular line :: 8 : 18, fovea slightly attenuated below its middle where it is nearly as wide as the greatest width of the fovea, the latter continued apparently to the antennal line, fovea filled with whitish hairs, vertex and temples along the upper edge of the eye with whitish hairs, face mostly shining, partly indistinctly reticulate, with indistinct punctures that are from one to three puncture widths apart, clypeus distinctly elevated above the apical margin, convex, sculptured like the face except that the punctures are sparser on the apical half, seemingly transversely reticulated, clypearea wanting, clypeus quite hairy its sculpture nearly hidden by hairs, labrarea slightly subemarginate, its width at base : length down the middle :: 10 : 3.5, width at apex : length down the middle :: 7 : 3.5, labrarea at base nearly half as wide as the labrum, the latter with a fringe of pale ochreous hairs, labrum punctured between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 11 : 9, joints 4 and 5 and following joints except end joint thicker than long, the end joint distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending nearly to the outer edge of the labrarea, black except for the apical half which is clear reddish, mandibles at base with a dome-shaped polished bursa, palpi nearly typical; *thorax* covered with an abundance of pale ochreous almost white hairs which are decidedly shorter and thicker on the dorsulum than the almost whitish hairs on the mesopleuræ, dorsulum dullish, finely reticulated and indistinctly punctured, the punctures not forming sharp contrast to the reticulation, notauli represented by a shining line, mesopleuræ with almost whitish hairs, sculptured somewhat like the dorsulum, its lower and anterior aspect, however, more shining and more distinctly punctured, scutel hairy and sculptured much like the shining part

of the mesopleuræ, metanotum hairy and sculptured like the scutel except that the sculpture is denser and less distinct and dullish, tegulæ dark brown, polished, wing base partly blackish brown, subcosta blackish brown, stigma and rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle but not as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus virtually interstitial and forming an acute angle with the first abscissa of the discoidal vein, membrane uniformly tinged with yellowish stramineous except the apical border which has a brownish tinge, legs blackish brown except for the onychii and hind tibiæ and rest of hind tarsi which are more or less pale brownish, legs covered with whitish hairs, scopa typical, its hairs almost white except at base above where they are decidedly darkened, hind metatarsi at most apparently a little narrower than mid metatarsi; *propodeum* with its enclosure poorly defined, dullish and finely reticulated, rest of upper face of propodeum sculptured somewhat like the dorsulum, and covered with finer, much longer whitish hair, propodeal pleuræ nearly polished, finely reticulate, with a few shallow punctures and almost hidden by the nearly white floccus; *abdomen* with its tergum shining, very finely reticulated and finely, sparsely, indistinctly punctured, the punctures from two to six or more puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, second, third and fourth tergites with an apical, whitish hair band that is interrupted in the middle of the second, apical edge of first, second, third and fourth tergites with a stramineous border, second tergite with its elevated portion down the middle : depressed portion :: 20 : 9, fifth tergite shining, reticulate, its punctures closer together than on the other tergites, pygidium nearly planate, with a shallow furrow on each side, rounded at apex, tergum with inconspicuous, pale, nearly erect hairs, in addition to the hair bands, fimbria dark seal-brown.

Andrena (Andrena) jennei new species.

Type.—No. 4,013. The Academy of Natural Sciences of Philadelphia.

Type Locality.—North Yakima, Washington, May 20, 1903 (Eldred Jenne, No. 60).

Presumably related to *A. (A.) runcinata* Cockerell.

Male.—Length 8 mm.; *body* black, mostly covered with pale ochreous or whitish hair; *head* with its facial line : transfacial line :: 48 : 67, axial line : temporal line :: 34 : 23, temples produced

into a near carina-like welt and with a rounded nearly right angle below the middle of the eye, and an obtuse rounded angle above the middle of the eye, malar line : joint 3 of antennæ :: 1 : 8, elevated portion of malar space nearly wanting, head covered with whitish hairs throughout, front dullish shining, rather coarsely, sparsely striate, ocellocular line : ocelloccipital line :: 16 : 5, face shining nearly polished, faintly reticulated and distinctly punctured, the punctures mostly from one to two puncture widths apart, clypeus planate, not elevated directly above the apical margin, sculptured much like the face but more nearly polished, clypearea wanting, sculpture of the clypeus not hidden by the moustache, labrarea subemarginate, width at base : length down the middle :: 8 : 3, width at apex : length down the middle :: 4 : 3, labrarea at base apparently a little more than half as wide as the labrum, the latter with a fringe of golden hairs, joint 3 of antennæ : 4 :: 8 : 4, joint 4 a little thicker than long, joint 5 and following joints distinctly longer than thick, antennæ dullish, flagel, straight in outline, antennæ blackish throughout, mandibles typical, slender, extending beyond the outer edge of the labrum, black except for the apical fourth which is dark reddish, palpi nearly typical; *thorax* covered with an abundance of pale ochreous or whitish hairs, hairs of dorsulum nearly as long as hair of mesopleuræ, dorsulum dullish, sculptured much like the face but not so distinctly or closely, notauli represented by a shining line, mesopleuræ with pale ochreous hairs throughout, finely reticulated and mostly covered with shallow pits, much like the dorsulum, scutel hairy and polished and with a few punctures that are smaller than on the dorsulum, metanotum hairy and sculptured much like the dorsulum except that the sculpture is denser, tegulæ dark brownish stramineous, polished, wing base mostly dark brown, subcosta dull light brownish stramineous, stigma bounded by yellowish stramineous veins, its membrane concolorous with the subcosta, rest of veins concolorous with the veins bounding the stigma, membrane pale with a faint brownish tinge, recurrent vein received by the second submarginal cell beyond the middle and a little nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus nearly interstitial, received by the median cell, forming an acute angle with the first abscissa of the median vein, legs blackish brown excepting the tarsi and hind tibiæ which are rather pale brownish stramineous, legs covered with pale ochreous hairs, hind metatarsi at most hardly wider than mid metatarsi and nearly half as wide as hind tibiæ at apex of the latter;

propodeum with its enclosure poorly defined, irregularly coarsely rugose, rounded at apex, rest of upper face indefinitely punctured and coarsely irregularly sculptured between the punctures, covered with pale ochreous hair, propodeal pleuræ shining, finely reticulated along the lower and anterior margin, elsewhere with a loose network of fine rugæ in the interstices of which the integument is indistinctly reticulate and punctured, partly nearly hidden by pale ochreous hairs; *abdomen* with its tergum nearly polished and finely punctured, the punctures sparsest on the depressed portion of the first tergite, second, third and fourth tergites uniformly sculptured, partly finely, indistinctly reticulate, with their punctures two to six or seven puncture widths apart, second tergite with its elevated portion down the middle : depressed portion :: 16 : 7, fifth tergite with its basal blackish portion covered with poorly defined punctures that are as many as six puncture widths apart, depressed portion of tergites brownish with an apical whitish edge, anal process entire, truncate, dark brownish at apex, tergum with rather conspicuous pale ochreous hairs that are supplemented on the sides of the second, third and fourth tergites by thin pale ochreous apical hair bands, hair at apex of abdomen pale ochreous. In manipulating the head with a pair of forceps in order to get a better view of the labrarea the clypeus was almost symmetrically impressed.

Andrena (Andrena) littlefieldi new species.

Type.—No. 4,014. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Colorado Springs, Colorado, April 22, Worthington Littlefield collector (T. D. A. Cockerell).

Related to *A. (A.) polygoni* Viereck and Cockerell and closely resembles *A. (A.) placida* Smith.

Male.—Length, 6.5 mm.; *body* black, covered with whitish hairs; *head* with its facial line : transfacial line :: 40 : 52, axial line : temporal line at most :: 13 : 14, black, its pubescence whitish throughout except along the lower edge of the labrum where it is golden, clypeal punctures shallow, not sharply defined, at most two puncture widths apart, mostly adjoining or nearly so, the interstices polished, clypearea wanting clypeus convex, mandibles black with reddish castaneous tips, palpi typical, joint 3 of antennæ : 4 and 5 :: 6 : 9, 3 : 4 :: 3 : 2 and 3 : 5 :: 6 : 5, antennæ blackish brown, labrarea widely, arcuately emarginate, greatest length of labrarea nearly twice the shortest length and apparently a little more than one-fourth the width of the labrarea at its base, cheeks rounded or subtrapezoidal, widest a

little above middle of eye; *thorax* black and with whitish pubescence, dorsulum dullish, partly shining, finely reticulate, with scattered punctures that are inconspicuous, shallow and as much as five puncture widths or more apart near the centre of the dorsulum; scutel sculptured like the centre of the dorsulum but not distinctly reticulated, metanotum densely sculptured, dull, legs pubescent like the thorax except the tarsi which have the hairs on the under surface rather golden, tarsi dark brown or blackish except onychii which are dark stramineous, claws brownish stramineous, tegulae and scale over wing base blackish, subcosta blackish brown, rest of veins and stigma pale yellowish stramineous, basal vein and media darker, brownish, membrane with a yellowish stramineous tinge, nervulus interstitial and forming almost a right angle with the first abscissa of the discoidal vein, first recurrent vein received a little before the middle of the second submarginal cell; *propodeum* rugulose except at apex of the ill-defined enclosure where it appears to be granular; *abdomen* black with a greenish tinge, its second, third and fourth tergites with a brownish to brownish-stramineous depressed apical margin, tergites imperfectly reticulate and shining, with shallow punctures about as sparsely distributed as on the scutel although not so distinctly defined, pubescence whitish throughout, second, third and fourth tergites poorly fasciate laterally, anal plate brownish stramineous and emarginate like a bird's tail.

Andrena (Andrena) lummi new species.

Type.—No. 4,034. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Vancouver, British Columbia, April 10, 1904 (R. V. Harvey, No. 602).

Related to *A. (A.) asmi* Viereck.

Female.—Length 10.5 mm.; *body* black, mostly covered with pale ochreous hair; *head* with its facial line : transfacial line :: 67 : 82, axial line : temporal line :: 34 : 20, malar line : joint 3 of antennae :: 4 : 13, elevated portion of malar space as long as the depressed portion, head covered with whitish and black hairs, front longitudinally striato-punctate, not elevated along the inner foveal edge, covered with black hairs, vertex with pale ochreous and black hairs, fovea at most : ocellocular line :: 11 : 13, foveal band wanting, fovea virtually contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 2 : 13, fovea hardly constricted near its middle where it is apparently nearly as wide as the greatest width of the fovea, the latter continued below

as a shallow furrow down to a point apparently nearly on the clypeal line, fovea blackish brown, lower margin of front, supraclypeal areas, clypeus and inner margin of face with whitish hairs mixed with black hairs, face shiny, punctured and finely reticulated, the punctures mostly from nearly adjoining to two puncture widths apart, clypeus elevated above the apical margin, convex, with a poorly developed median longitudinal welt, more coarsely and more sparsely punctured than the face, clypearea poorly defined, clypeus with its basal half dullish reticulate, its apical half nearly polished, labrarea subemarginate, its width at base : length down the middle :: 14 : 4, width at apex : length down the middle :: 6 : 4, labrarea at base nearly two-thirds as wide as the labrum, the latter with a fringe of dark hairs, joint 3 of antennæ : 4 + 5 :: 13 : 12, joints 4 and 5 as thick as long, the succeeding joints apparently a little longer than thick, the end joint distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to a little beyond the outer edge of the labrum, black except for the apical half which is mostly dark reddish, palpi nearly typical; *thorax* covered with an abundance of pale and black hairs which are tawny on the dorsulum where they are somewhat shorter than the black and whitish hairs on the mesopleuræ, dorsulum dullish, indistinctly punctured and finely, densely reticulated, the sculpture nearly hidden by the dense covering of pale hair with a tawny tinge, notauli represented by a shining line, mesopleuræ with black hairs except for a streak of white hair along the convexity between the anterior face and the lateral face and along the upper margin where the hairs are whitish, sculptured like the dorsulum though not so finely and more conspicuously reticulated and punctured, scutel hairy and sculptured much like the dorsulum except for being less densely sculptured, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ dark brownish, polished, wing base partly blackish brown, subcosta blackish brown, stigma brownish stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus received by the median cell, nearly interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown except for the claws which are brownish stramineous, legs covered with blackish or brownish hairs except the mid and hind femora, hind coxæ and trochanters, and lower third of scopa where the hairs are whitish or silvery, scopa

nearly typical but loose, hind metatarsi at most nearly as wide as mid metatarsi; *propodeum* with its enclosure poorly defined, medially with a shallow impression, finely reticulated throughout and with short weak radiating, crooked plicæ along the base, rest of upper face of propodeum sculptured somewhat like the dorsulum but more distinctly and covered with nearly white hair, propodeal pleuræ shining, distinctly reticulated and with a few scattered indistinct punctures, and almost hidden by the whitish floccus; *abdomen* with its tergum shining, finely reticulated and finely indistinctly sparsely punctured, its first and second tergite with long, nearly erect pale ochreous hairs, the succeeding tergites with distinctly shorter pale ochreous hairs that on the fourth and fifth tergites are mixed with a few black hairs, second tergite with its elevated portion down the middle : depressed portion :: 10 : 22, fifth tergite with its sculpture more distinct than that on the preceding tergite, pygidium truncate, black at apex, second and third tergites with a thin apical hair band, fimbria blackish with pale hairs laterally.

Andrena (Andrena) monogonoparia new species.

Type.—No. 4,015. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Nevada (H. K. Morrison).

Related to *A. (A.) frigida cockerelli* Graenicher.

Male.—Length 8.5 mm.; *body* black, mostly covered with whitish hair; *head* with its facial line : transfacial line :: 54 : 70, axial line : temporal line :: 36 : 25, temples produced into a right angle, the angle opposite the middle of the eye, malar line : joint 3 of antennæ :: 2 : 8, elevated portion of malar space shorter than the depressed portion, head covered with whitish and black hairs throughout, the white hairs present only on the clypeus, supraclypeal area and to some extent on the vertex, occiput and temples, front rather roughly reticulated and partly indistinctly striate, ocellocular line : ocelloccipital line :: 18 : 6, face shining, distinctly punctured, its punctures mostly from one to two puncture widths apart, the interstices finely reticulated, clypeus apparently slightly convex, elevated directly above the apical margin, nearly polished and punctured much like the face, clypearea wanting, sculpture of the clypeus not hidden by the moustache, labrarea with two faces, emarginate beneath at the apex of the lower face, width at base : length down the middle :: 8 : 3, width at apex : length down the middle :: 25 : 3, labrarea at base apparently half as wide as the labrum, the latter with a fringe of golden hairs, joint 3 of antennæ :

4 :: 8 : 7, joint 4 and following joints nearly twice as long as thick the terminal joint excepted, which is apparently at least twice as long as thick, dullish, flagel undulate in outline, antennæ blackish throughout, right mandible nearly typical, rather slender, extending nearly to the end of the basal fourth of its fellow, black except for the apical third which is mostly dark reddish, palpi slender, nearly typical; *thorax* covered with an abundance of whitish hairs, that are sparsely mixed with black on the dorsulum and scutel, hairs of dorsulum seemingly as long as hair of mesopleuræ, dorsulum dullish, finely reticulated and sparsely punctured, the punctures rather indistinct and mostly four or five puncture widths apart, notauli represented by a shining line, mesopleuræ with whitish hairs throughout, finely reticulated and mostly covered with shallow pits that are mostly two or three puncture widths apart, scutel hairy and sculptured much like the dorsulum except that it is partly nearly polished, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ brownish stramineous, polished, wing base mostly pale stramineous, subcosta blackish, stigma brownish stramineous with a blackish tinge, rest of veins dull stramineous with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and little nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial, forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown excepting the tarsi and hind tibiæ which are rather dark brown, legs covered with whitish hairs, hind metatarsi at most hardly wider than mid metatarsi and nearly half as wide as hind tibiæ at apex of the latter; *propodeum* with its enclosure well defined, finely reticulate, rounded at apex, rest of upper face sculptured somewhat like the mesopleuræ but with smaller pits and covered with whitish hair, propodeal pleuræ sculptured apparently like the mesopleuræ the sculpture not hidden by the uniformly distributed whitish hairs; *abdomen* with its tergum shining, finely reticulated and indistinctly punctured, the punctures many puncture widths apart, first and second tergites with erect whitish hairs, third and following tergites with dark or blackish hairs excepting the fifth beyond its base which like the apex of the abdomen is covered with pale brownish hairs, second tergite with its elevated portion down the middle : depressed portion :: 23 : 5, fifth tergite with its basal blackish portion covered with poorly defined punctures that are many puncture widths apart, rest of fifth tergite and depressed portion of sixth tergite brownish

stramineous, anal process spatulate and stramineous at apex, not emarginate, tergum with its hairs not supplemented on the sides of the second, third and fourth tergites by apical hair bands.

Andrena (Andrena) obscuripostica new species.

Type.—No. 4,016. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Nevada (H. K. Morrison).

Related, presumably, to *A. (A.) apacheorum* Cockerell.

Female.—Length 9 mm.; *body* black, covered with pale ochreous pubescence; *head* with its facial line : transfacial line :: 53 : 74, axial line : temporal line :: 29 : 17, black, its pubescence ochreous except along the lower edge of the labrum where it is reddish brown, along the lower edge of the mandibles where it is brownish and in the foveæ where it is seal-brown, except for the long blackish hairs and on the occiput and temples where it is whitish, fovea apparently at most two-thirds as wide along the ocellocular line than the latter is long, hardly separated from the eye margin where the ocellocular line joins the latter, fovea shallow, fovearea wanting, fovea extending distinctly below the antennal line but apparently falling short of the clypeal line, clypearea wanting, clypeal punctures distinct, most of the punctures from one to two puncture widths apart, the interstices partly polished partly reticulated on the disc, elsewhere reticulated throughout, clypeus convex, deeply, transversely impressed just before the apical edge, mandibles black except for the apical two-thirds of the inner margin and all of the apical third which are reddish castaneous, palpi typical, joint 3 of antennæ : 4 + 5 :: 9 : 8, antennæ blackish brown, labrarea broad and short, subemarginate, nearly as wide at apex as at base, four times as wide at base as long down the middle, malar space virtually crowded out by the eye; *thorax* black with thin ochreous pubescence above and whitish pubescence on the pleuræ, dorsulum mostly dull and finely reticulated, with indistinct punctures that are as many as four to five puncture widths apart, scutellum sculptured like the dorsulum, metanotum densely sculptured, legs pubescent like the pleuræ except that the hairs of the tibiæ and tarsi are brownish golden, scopa golden, its hairs not dense enough to obscure the tegument, their arrangement and character typical, tarsi and hind tibiæ dark brown, rest of legs darker, tegulæ and wing base dark brownish stramineous to blackish, stigma pale brownish stramineous, subcosta blackish brown, border of stigma and remaining veins brownish stramineous, darker than the stigma, first recurrent vein received by the second submarginal cell a little

beyond the middle, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein; *propodeum* with a poorly defined funnel-shaped enclosure, sides of the propodeum similarly sculptured with the enclosure though more rugulose and in addition indefinitely punctured; *abdomen* dullish black, finely reticulated and indistinctly punctured, the tergum from the base of the depressed margin of the second tergite to the end of the fourth tergite more shining than elsewhere but nevertheless finely reticulated, depressed portion of the second tergite down the middle : elevated portion :: 7 : 16, second, third and fourth tergites with most of their depressed portion covered with a whitish fascia, erect pubescence of tergum also whitish, that of the first and second tergite rather conspicuous, fifth tergite punctured, no definite sculpture between the punctures, fimbria dark brown, pygidium, planate, rounded at apex, conical in outline, dark reddish brown to blackish, and with a slightly submarginally impressed line on each side.

Andrena (Andrena) pulverea new species.

Type.—No. 4,043. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California (no further data).

Related to *A. (A.) papagorum* Viereck and Cockerell.

Female.—Length 9 mm.; *body* black, mostly covered with pale ochreous or whitish hairs; *head* with its facial line : transfacial line :: 52 : 65, axial line : temporal line :: 28 : 17, malar line : joint 3 of antennæ :: 2 : 9, ocelloccipital line : greatest diameter of lateral ocellus :: 3 : 4, elevated portion of malar space nearly wanting, head covered with whitish hairs, front rather indistinctly, longitudinally striate, not elevated into a welt along the fovea, its crista poorly developed, fovea at most : ocellocular line :: 10 : 13, foveal band wanting, distance between fovea and ocelli : ocellocular line :: 4 : 13, fovea slightly attenuated below its middle where it is apparently only a little narrower than the greatest width of the fovea, the latter continued to a point well below the antennal line, upper half of fovea filled with pale seal-brown hairs, lower half with still paler hairs vertex and temples along the upper edge of the eye with dark hairs, face shining, finely reticulate, with distinct punctures that are as many as one to three puncture widths apart, clypeus distinctly elevated above the apical margin, slightly convex, dullish, sculptured like the face except that the punctures are seemingly smaller and the reticulation denser, clypearea present but poorly defined and represented by a narrow impunctate area, clypeus

thinly hairy, its sculpture not at all hidden by hairs, labrarea triangular, its width at base : length down the middle :: 12 : 5, labrarea at base nearly two-thirds as wide as the labrum, the latter with a fringe of brownish hairs, labrum apparently structureless and sculptureless between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 9 : 6, joints 4 to 9 thicker than long, the succeeding joints as thick as long or a little longer than thick except joint 12 which is distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending a little beyond the outer edge of the labrarea, black except for the apical half which is dark reddish, palpi nearly typical; *thorax* covered with an abundance of whitish hairs which are distinctly shorter on the dorsum where they are darker than the almost white hairs on the mesopleuræ, dorsum dullish, finely reticulated, indistinctly punctured, the punctures mostly many puncture widths apart, notauli represented by a shining line, mesopleuræ with almost white hairs, sculptured somewhat like the dorsum but more shining and more distinctly punctured, scutellum hairy and sculptured much like the dorsum, metanotum hairy and sculptured like the dorsum except that the sculpture is denser and less distinct, tegulæ blackish brown, polished, wing base partly blackish brown, subcosta blackish brown, stigma pale brownish stramineous, rest of veins dull stramineous, with a blackish tinge excepting the cubiti which are yellowish, received by the second submarginal cell beyond the middle and nearly as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, membrane uniformly tinged with yellowish brown, legs dark brown, covered with brownish golden and pale ochreous or whitish hairs, scopa typical, its hairs of the lower half pale ochreous almost white, of its upper half with a golden hue, hairs at base above decidedly darkened, hind metatarsi at most apparently a little narrower than mid metatarsi; *propodeum* with its enclosure poorly defined, shining and finely reticulated, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but with smaller punctures, and covered with finer pale ochreous hair, propodeal pleuræ fine reticulated, shining and with sparse shallow punctures and almost hidden by the nearly white floccus; *abdomen* with its tergum shining, satiny, finely reticulate and indistinctly punctured, the punctures from two to six or more puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, second, third and fourth tergites with an apical,

whitish hair band that is interrupted in the middle of the second and third tergites, apical edge of first, second, third and fourth tergites with a whitish stramineous border, second tergite with its elevated portion down the middle : depressed portion :: 18 : 9, fifth tergite dullish, reticulate, its punctures larger than on the other tergites, pygidium nearly planate, sculptured, punctate and rugulose, nearly truncate at apex, tergum with inconspicuous whitish hairs in addition to the hair bands and the nearly erect whitish hairs laterally on the first and second tergites, fimbria pale brown.

Andrena (Andrena) sancta new species.

Type.—No. 4,017. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California (no additional data except a written n. on the locality label).

Related to *A. (A.) parnassiae* Cockerell.

Female.—Length 10 mm.; *body* black, mostly covered with whitish hairs; *head* with its facial line : transfacial line :: 53 : 71, axial line : temporal line :: 29 : 16, malar line : joint 3 of antennæ :: 1.5 : 9, elevated portion of malar space nearly wanting, head covered with whitish hairs, front shiny, finely longitudinally striate, with a poorly defined crista and not elevated along the inner margin of the fovea, fovea at most : ocellocular line :: 8 : 13, foveal band nearly wanting, fovea virtually contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 6 : 13, fovea somewhat constricted near its upper end, nearly parallel sided throughout and continued below the constriction as a shallow furrow down to a point apparently a little below the clypeal line, fovea pale seal-brown above its middle, pale ochreous or whitish below, fovea wanting, face dullish, finely reticulated and indefinitely punctured, clypeus distinctly elevated above the apical margin, slightly convex, with its basal half sculptured much like the face but distinctly punctured, the apical half mostly almost polished and coarsely punctured, the punctures from nearly adjoining to two puncture widths apart on each side of the impunctate, median longitudinal, feeble, welt-like clypearea, clypeus thinly hairy, its surface not hidden, labrarea truncate, width at base : length down the middle :: 11 : 5, width at apex : length down the middle :: 3 : 5, labrarea at base nearly two-thirds as wide as the labrum, the latter with a fringe of pale stramineous hairs, joint 3 of antennæ : 4 + 5 :: 9 : 9, joint 4 as thick as long, the succeeding joints a little longer than thick except the fifth which is as long as thick and the end

joint which is much longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrum, black except for the apical half which is dark reddish, palpi nearly typical; *thorax* covered with an abundance of whitish hairs which are shorter on the dorsulum where they are pale ochreous than the whitish hairs on the mesopleuræ, dorsulum dullish, punctured, finely reticulated except for the middle third of the posterior half which is polished and punctured, the punctures of the reticulated area from nearly adjoining to nearly four puncture widths apart, the punctures of the polished area much sparser, notauli represented by an impressed line, mesopleuræ with whitish hairs throughout, finely reticulate and sparsely punctured, scutel hairy and sculptured much like the polished part of the dorsulum except for being more finely punctured, metanotum hairy and sculptured like the dullish portion of the dorsulum except that the sculpture is denser, tegulæ dark brownish stramineous, polished, wing base partly blackish brown, subcosta blackish brown, stigma dark brownish stramineous, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and apparently as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown except for the tarsi which are more or less dark brownish stramineous, legs covered with whitish hairs, scopa typical, its hairs of a whitish hue, and concolorous throughout except for the hairs on the basal half of the upper edge where the hairs are blackish brown, hind metatarsi at most apparently as wide as mid metatarsi; *propodeum* with its enclosure poorly defined, triangular, finely reticulated, not at all rugose, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but seemingly with smaller pits and covered with whitish hair, propodeal pleuræ distinctly reticulated and with a few ill-defined punctures, and almost hidden by the whitish floccus; *abdomen* with its tergum shiny, punctured and delicately reticulated, the punctures fine and from two to eight or more puncture widths apart on the first tergite except on its depressed portion where the punctures are closer together, the punctures on the elevated portion of the second, third and fourth tergites similar to those on the first tergite and sparser than on the depressed portions of the second, third and fourth tergites, where the punctures are much as on the depressed portion of the first tergite, second tergite with its elevated portion down the middle : depressed

portion :: 18 : 8, fifth tergite with its sculpture coarser, its punctures not so well defined as on the preceding tergite, pygidium black, planate, truncate at apex, tergum with inconspicuous pale hairs, second, third and fourth tergites with an apical, interrupted, white, hair band, fimbria brownish.

Andrena (Andrena) scutellinitens new species.

Type.—No. 20,679, U. S. National Museum.

Type Locality.—California (C. F. Baker, No. 2,378).

Related to *A. (A.) nubecula* Smith.

Female.—Length 8 mm.; *body* black, mostly covered with pale ochreous or yellowish hairs; *head* with its facial line : transfacial line :: 59 : 63, axial line : temporal line :: 28 : 16, malar line : joint 3 of antennæ :: 2 : 9, ocelloccipital line : greatest diameter of lateral ocellus :: 7 : 5, elevated portion of malar space nearly wanting, head covered with hairs that are concolorous with the body hairs, front rather distinctly, longitudinally striate, frontal crista vestigial, front not elevated into a welt along the fovea, fovea at most : ocellocular line :: 7.5 : 11, foveal band represented by a shiny line at upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 4 : 11, fovea somewhat attenuated below its middle where it is apparently only a little narrower than the greatest width of the fovea, the latter continued to a point apparently a little above the clypeal line, fovea filled with hairs that are concolorous with the body hairs, vertex and temples along the upper edge of the eye with the hairs concolorous with the body hairs, face polished with distinct punctures that are from adjoining to as many as three puncture widths apart, clypeus slightly elevated above the apical margin, convex, sculptured like the face except that the punctures are larger and mostly not so close together, clypearea present but poorly defined, clypeus thinly hairy its sculpture not at all hidden by hairs, labrarea emarginate, its width at base : length down the middle :: 12 : 4, width at apex : length down the middle : 3.5 : 4, labrarea at base nearly two-thirds as wide as the greatest length of labrum, the latter with a fringe of pale hairs, labrum without a median longitudinal crista between the labrarea and apical edge of labrum, joint 3 of antennæ : 4 + 5 :: 9 : 9, joint 4 thicker than long, the succeeding joints as thick as long or a little longer than thick except joint 12 which is distinctly longer than thick, antennæ blackish brown throughout, mandibles typical, robust, extending to the outer edge of the labrarea, black except for the apical half which is mostly clear dark reddish, palpi nearly typical; *thorax* covered with an abundance

of yellowish hairs which are much shorter on the dorsulum where they are darker than the almost whitish hairs on the mesopleuræ, dorsulum shining, partly polished, partly finely reticulated, punctured like the clypeus but not so sparsely, notauli represented by a shiny line, mesopleuræ with almost whitish hairs, sculptured somewhat like the dorsulum but more densely reticulated, scutel hairy and mostly polished, otherwise sculptured much like the dorsulum, metanotum hairy and densely sculptured, the sculpture nearly hidden by the hairs, tegulæ blackish brown, polished, wing base partly blackish brown, subcosta blackish brown, stigma pale yellowish stramineous, rest of veins dull brownish stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus nearly interstitial, received by the median cell and forming an acute angle with the second abscissa of the median vein, membrane uniformly tinged with brown, apical margin darkest, legs blackish except for the small joints of the tarsi which are more or less pale brown, legs covered with brownish golden and nearly whitish hairs, scopa typical, its hairs golden except at base above where they are decidedly darkened, hind metatarsi at most : mid metatarsi :: 11 : 12; *propodeum* with its enclosure rather well defined, shiny, finely reticulated and roughened by oblique lateral rugæ, rest of upper face of propodeum rugulose, punctured and reticulated, covered with fine nearly whitish hair, propodeal pleuræ reticulated, with sparse shallow punctures and almost hidden by the almost white floccus; *abdomen* with its tergum shining and finely reticulated as well as punctured, the punctures from one to three or more puncture widths apart on the first tergite, the punctures hardly closer on the succeeding tergites, first, second, third and fourth tergites with the depressed margin covered with a broad nearly whitish hair band that is not interrupted in the middle, apical edge of first, second, third and fourth tergites with a stramineous border that is nearly hidden by the hair bands, second tergite with its elevated portion down the middle : depressed portion :: 16 : 12, fifth tergite shining, reticulate, its punctures coarser than on the other tergites, and nearly hidden by the fimbria, pygidium convex, without a shallow furrow on each side, nearly pointed at apex, tergum with inconspicuous blackish hairs in addition to the hair bands and the nearly erect yellowish hairs at base of first tergite, fimbria dark cacao-brown.

Allotype.—No. 4,041. The Academy of Natural Sciences of Philadelphia.

Allotype Locality.—Nevada (H. K. Morrison).

Length 6.5 mm.; *body* black, mostly covered with ochreous or yellowish hair; *head* with its facial line : transfacial line :: 53 : 62, axial line : temporal line :: 27 : 17, temples rounded, subtrapezoidal, malar line : joint 3 of antennæ :: 1 : 7, elevated portion of malar space as in the female, front distinctly striated, shining, ocellocular line : ocelloccipital line :: 12 : 5, face polished, distinctly punctured, its punctures mostly adjoining or one puncture width apart, clypeus convex, sculptured much like the face, somewhat elevated directly above the apical margin, clypearea represented near the apical margin, sculpture of the clypeus nearly hidden by the moustache, labrarea with a broad emargination, polished, its width at base : greatest length :: 8 : 4.5, width at apex : length down the middle :: 5 : 3, labrarea at base nearly half as wide as the labrum, the latter with a fringe of pale golden hairs, joint 3 of antennæ : 4 :: 7 : 5, joint 4 and following joints from as long as thick to a little longer than thick excepting the end joint which is distinctly nearly twice as long as thick, flagel, almost straight in outline, antennæ dullish and blackish throughout, mandibles atypical, robust, extending a little beyond the outer edge of the labrum and to the middle of its fellow, black except for the apical half which is dull dark reddish, palpi nearly typical; *thorax* as in the female except that the dorsulum is mostly polished, legs blackish brown excepting the tarsi and hind tibiæ which are paler, hind metatarsi at most hardly wider than mid metatarsi and nearly half as wide as hind tibiæ at apex of the latter; *propodeum* with its enclosure much as in the female, more regulose and with an ill-defined median longitudinal carina, rest of upper face as in the female, propodeal pleuræ sculptured apparently as in the female; *abdomen* as in the female except as follows: fifth tergite with a hair band like the preceding tergites, apical edge of all tergites with a pale stramineous border, hair band of second tergite interrupted in the middle, second tergite with its elevated portion down the middle : depressed portion :: 14 : 8, tergum with pale appressed hairs on the second segment, anal process narrow, truncate, pale stramineous at apex, its sides diverging, hair at apex of abdomen of a golden hue.

Andrena (Andrena) semifulva new species.

Type.—No. 4,048. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California (E. Norton).

Related to *A. (A.) saccata* Viereck.

Female.—Length 13 mm.; *body* black, mostly covered with black hairs; *head* with its facial line : transfacial line :: 73 : 98, axial line : temporal line :: 39 : 26, malar line : joint 3 of antennæ :: 4 : 14, elevated portion of malar space nearly as long as depressed portion, head covered with black or blackish hairs except for some pale hairs on the vertex, front more reticulate than striate, not elevated along the inner foveal edge, fovea at most : ocellocular line :: 18 : 24, foveal band wanting, fovea virtually contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 5 : 24, fovea hardly constricted near its middle where it is apparently nearly as wide as the greatest width of the fovea, the latter continued below the middle as a narrowing shallow impression down to a point distinctly below the clypeal line, fovea very dark seal-brown, face shining, finely reticulated and rather indistinctly punctured, the punctures one to three puncture widths apart, clypeus slightly elevated above the apical margin, convex, sculptured much like the face but more shining and more distinctly punctured, clypearea wanting, clypeus densely hairy laterally where its surface is nearly hidden by hairs, labrarea rounded, its width at base : length down the middle :: 20 : 5, convex at apex, labrarea at base at least two-thirds as wide as the labrum, the latter with a fringe of brownish hairs, joint 3 of antennæ : $4 + 5$:: 14 : 11, joint 4 nearly as thick as long, the succeeding joints as long or a little longer than thick, the end joint distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrum, black except for the apical half which is partly dark reddish, palpi nearly typical; *thorax* covered with an abundance of slender hairs which are ochreous on the dorsulum where they are a little shorter than the blackish hairs on the mesopleuræ, dorsulum dullish, finely reticulated and closely punctured with rather indefinite punctures, notauli represented by a shining line, mesopleuræ with blackish hairs, except along the upper margin where the hairs are concolorous with the hairs of the dorsulum, scutel hairy and sculptured much like the dorsulum except for being less finely sculptured, metanotum hairy and sculptured like the dorsulum except that the sculpture is coarser, tegulæ dark brownish stramineous, reticulated and shiny, wing base partly blackish brown, subcosta blackish brown, stigma pale stramineous with a blackish tinge, rest of veins dull brownish stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell a little before, in or a little beyond the middle and as near or nearer to the first transverse cubitus

as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown except for the tarsi which are more or less brownish stramineous, legs covered with blackish or dark brown hairs, scopa typical, its hairs of a blackish brown hue and concolorous throughout, hind metatarsi at most apparently as wide as mid metatarsi; *propodeum* with its enclosure poorly defined, finely reticulated, not at all rugose, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but covered with ochreous hair, propodeal pleuræ finely reticulate and with sparse indefinite punctures, not hidden by the poorly developed blackish floccus; *abdomen* with its tergum shining, finely reticulated and finely punctured, the punctures poorly defined and from two to six or more puncture widths apart on the first tergite, second, third and fourth tergites sculptured much like the first tergite, second tergite with its elevated portion down the middle : depressed portion :: 29 : 10, fifth tergite with its sculpture of the same kind as the preceding tergite, pygidium black, almost planate and nearly pointed at apex, dullish, without an enclosure, tergum with rather conspicuous blackish hairs, second, third and fourth tergites without a hair band, fimbria blackish brown. A paratopotype has the hair of the dorsulum and scutel reddish and the labrarea truncate, the truncature as wide as the length of the labrarea down the middle.

Andrena (Andrena) sola new species.

Type.—No. 4,047. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (A.) subtilis* Smith, and probably a small variety of that species.

Female.—Length 11 mm.; *body* black, mostly covered with pale hairs; *head* with its facial line : transfacial line :: 63 : 84, axial line : temporal line :: 33 : 21, malar line : joint 3 of antennæ :: 1.5 : 10, elevated portion of malar space virtually wanting, head covered with pale ochreous hairs, front finely longitudinally striate on each side of a well-developed median longitudinal crista, not elevated along the inner foveal edge, fovea at most : ocellocular line :: 12 : 17, foveal band well developed, polished and sparsely punctured, fovea nearly contiguous to the upper end of the inner eye margin, distance between fovea and ocelli at the latter point : ocellocular line :: 1 : 17, fovea constricted near its middle where it is apparently only two-thirds as wide as the greatest width

of the fovea, the latter continued below the constriction as a shallow depression down to a point apparently on the clypeal line, fovea with a little more than its upper half seal-brown, the rest pale ochreous, fovarea widest a little below the middle of the fovea, not angulated, its widest part : ocellocular line :: 2.5 : 17, face shiny, delicately reticulated and sparsely punctured, its punctures not well defined and from two to four puncture widths apart, clypeus distinctly elevated above the apical margin, convex, polished and dullish reticulate, punctured as sparsely as the face but the punctures larger and more distinct, clypearea wanting, clypeus thinly hairy, its sculpture not obscured by the pubescence, labrarea truncate, width at base : length down the middle :: 13 : 5, width at apex : length down the middle :: 5 : 5; labrarea at base nearly half as wide as the labrum, the latter with a fringe of dark hairs, joint 3 of antennæ : 4 + 5 :: 10 : 10, joint 4 thicker than long, the succeeding joints from as long as to distinctly a little longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrarea, black except for the apical half which is blackish except for a reddish tinge, palpi nearly typical; *thorax* covered with an abundance of pale hairs which are tawny on the dorsulum where they are shorter than the whitish hairs on the mesopleuræ, dorsulum dullish, reticulated and punctured, the punctures apparently better defined and closer together than the punctures of the face, notauli represented by a shiny line, mesopleuræ distinctly reticulated and punctured somewhat like the face but the punctures larger, with whitish hairs, except along the upper margin where the hairs are tawny as on the dorsulum, scutel hairy and sculptured much like the dorsulum, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ dark brownish stramineous, with a blackish tinge, membrane uniformly tinged with brown, first recurrent vein received by the second submarginal cell before the middle and nearly as near to the first transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown except for the claws which are more or less brownish stramineous, legs covered with whitish and brownish hairs, scopa typical, its hairs of a whitish hue, and concolorous throughout except that the hairs on the upper margin are brownish to almost blackish at base of upper margin, hind metatarsi at most apparently as wide as mid metatarsi; *propodeum* with its enclosure sharply defined, finely reticulated, not at all rugose, rest of upper

face of propodeum sculptured somewhat like the mesopleuræ and covered with whitish hair, propodeal pleuræ with delicate reticulations, more shiny than the mesopleuræ and more sparsely punctured and almost hidden by the whitish floccus; *abdomen* black with a bluish tinge, with its tergum shining, finely reticulated and punctured, first tergite more distinctly and more closely punctured than the face, punctures on the elevated portion of the second and third tergites nearly as close together as on the disc of the first tergite and a little larger than on the depressed portions, second tergite with its elevated portion down the middle : depressed portion :: 18 : 11, fifth tergite dullish and with rather indistinctly defined punctures that are from three to four puncture widths apart, pygidium black, planate, pointed at apex, dullish without an enclosure, tergum with inconspicuous pale hairs, second, third and fourth tergites without a hair band, fimbria pale seal-brown.

Other Locality.—Half way up Mt. Hamilton Road near San José, California, on wild cherry (H. Morrison, 1,477).

Andrena (Andrena) stictigastrea new species.

Type.—No. 4,036. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Presumably related to *A. (A.) fulvinigra* Viereck and Cockerell.

Female.—Length 9.5 mm.; *body* black, covered throughout with black or blackish brown hairs; *head* with its facial line : transfacial line :: 57 : 80, *axial line* : *temporal line* :: 30 : 17, malar line : joint 3 of antennæ :: 2 : 7.5, elevated portion of malar space barely represented, head covered with black or blackish brown hairs, front coarsely striated, fovea at most : *ocellocular line* :: 10 : 16, *foveal band* poorly developed, *fovea* virtually contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : *ocellocular line* :: 5 : 16, *fovea* constricted near its middle where it is apparently half as wide as the greatest width of the fovea, the latter continued below the constriction as a shallow depression down to a point apparently on the clypeal line, *fovea* with dark hair, *fovarea* wanting, face polished, not so densely punctured as the clypeus, clypeus slightly elevated above the apical margin, convex, shining, covered with distinct adjoining or nearly adjoining punctures, clypearea exceedingly narrow but extending nearly from base to apex, clypeus thinly hairy with dark hairs, *labrarea* rounded truncate, its width at base : length down the middle :: 10 : 5, width at apex : length down the middle :: 3 : 5, *labrarea* at base nearly half as wide as the labrum, the

latter with a fringe of dark hairs, joint 3 of antennæ : 4 + 5 :: 8 : 6.5, joint 4 thicker than long, *the succeeding joints at most a little longer than thick*, antennæ blackish throughout, mandibles typical, robust, not extending to the outer edge of the labrum, but slightly overlapping below the middle of the labrum, black except for the apical third which is dark reddish, palpi nearly typical; *thorax* covered with blackish hairs which are darkest on the dorsulum where they are shorter than the dark brownish hairs on the mesopleuræ, dorsulum dullish, finely reticulated, coarsely punctured, the punctures from nearly adjoining to six puncture widths apart, the punctures mostly sparsely distributed, notauli represented by an impressed shining line, mesopleuræ sculptured much like the scutel but more coarsely so, with dark brownish hairs, except along the upper margin where the hairs are blackish, scutel hairy and exceedingly densely punctured, its punctures as close together as possible, metanotum hairy and sculptured like the scutel except that the sculpture is apparently not so coarse, tegulæ blackish stramineous, with blackish margins, polished, wing base partly blackish brown, membrane with a uniform blackish brown tinge, subcosta blackish brown, stigma bright brownish, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus not interstitial but nearly so, received by the median cell and forming an acute angle with the second abscissa of the median vein and with the first abscissa of the discoidal vein, legs blackish brown except for the claws which are more or less brownish stramineous, legs covered with blackish hairs, scopa typical, its hairs of a blackish brown hue, and concolorous throughout, hind metatarsi at most apparently as wide as mid metatarsi; *propodeum* with its enclosure well defined, coarsely sculptured in addition to having at least five well-defined longitudinal carinæ on each side of a median longitudinal carina, rest of upper face of propodeum sculptured somewhat like the metanotum but not so finely and covered with blackish brown hair, propodeal pleuræ shining, delicately reticulated and with sparse shallow punctures, not nearly hidden by the blackish brown floccus; *abdomen* with its tergum polished, punctured, the punctures clear cut but small and from one to four puncture widths apart on the first tergite, from one to three puncture widths apart on the elevated portion of the second and third tergites where the punctures are seemingly larger than on the depressed portions

and from one to three puncture widths apart on the depressed portions of the second and third tergites, second tergite with its elevated portion down the middle : depressed portion :: 13 : 6, fourth tergite more sparsely punctured than second and third, fifth tergite with its punctures sparse, ill defined and surrounded by fine reticulations, pygidium dullish, slightly convex, rounded broadly truncate at apex, tergum with inconspicuous blackish hairs, second, third and fourth tergites without a hair band, fimbria blackish brown or dark seal-brown. The parts described in italics have been destroyed by museum pests, so the italicised points are what will probably be found in a perfect specimen.

Andrena (Andrena) subnigripes new species.

Type.—No. 4,018. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (A.) nigripes* Provancher.

Female.—Length 10 mm.; *body* black, mostly covered with pale hairs; *head* with its facial line : transfacial line :: 55 : 77, axial line : temporal line :: 30 : 17, malar line : joint 3 of antennæ :: 1 : 11, elevated portion of malar space nearly as long as depressed portion, head covered with ochreous hairs, except for some scattered blackish hairs or brownish hairs along the inner eye margin, on the clypeus and mandibles, front longitudinally striate, dullish, with a well-defined median longitudinal crista, fovea at most : ocellocular line :: 10 : 16, foveal band poorly developed, dullish, with a few large punctures, fovea nearly contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 5 : 16, fovea constricted near its middle where it is apparently half as wide as the greatest width of the fovea, the latter continued below the constriction as a narrowing depression down to a point apparently midway between the clypeal line and the antennal line, fovea with pale seal-brown hairs above the middle, pale ochreous nearly white hairs below the middle, face partly shining, partly dullish, reticulated and with a few large scattered punctures, clypeus decidedly elevated above the apical margin, feebly convex, with a median longitudinal shining welt at the anterior edge, mostly finely reticulated, dullish and indistinctly punctured, clypearea represented by the welt described above, otherwise wanting, clypeus with its elevated edge shining, labrarea rounded at apex, nearly triangular, width at base : length down the middle :: 14 : 4, labrarea at base nearly two-thirds as wide as the labrum, the latter with a fringe of dark

hairs that have pale tips, joint 3 of antennæ : 4 + 5 :: 11 : 7.5, joint 4 thicker than long, like the fifth, the succeeding joints as long as or a little longer than thick except the end joint which is distinctly longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to a little beyond the middle of the labrum, black except for the apical half which is dark reddish, palpi nearly typical; *thorax* covered with an abundance of tawny hairs dorsally and over the tubercles, the hairs as thin and long on the dorsulum as on the mesopleuræ where the hairs are pale ochreous, dorsulum dull, finely reticulated, and closely punctured, the punctures from one to three puncture widths apart on the anterior third, less distinct and more widely separated on the posterior half where the dorsulum is in addition finely longitudinally striated, notauli represented by a shining line, mesopleuræ with pale ochreous hairs, except along the upper margin where the hairs are tawny like on the dorsulum, sculptured somewhat like the anterior third of the dorsulum except that the punctures are represented by pits, scutel hairy and sculptured much like the dorsulum except for being less distinctly sculptured and not striate, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser and nearly hidden by the hairs, tegulæ dark brown, polished, wing base partly dark brown, subcosta blackish brown, stigma brownish stramineous with a blackish tinge, rest of veins dull brownish stramineous, membrane with a brownish tinge, first recurrent vein received by the second submarginal cell before the middle and not as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus nearly interstitial and forming an acute angle with the median vein and the first abscissa of the discoidal vein, legs blackish except for the tarsi which are more or less blackish brown, and the claws which are reddish stramineous, legs covered with blackish hairs, excepting the femoral hairs and the flocci which are pale ochreous, scopa typical, its hairs of a blackish hue, and concolorous throughout, hind metatarsi at most apparently as wide as mid metatarsi, the latter with pale hairs along the upper edge; *propodeum* with its enclosure poorly defined, finely reticulated, with short feeble rugæ along the basal edge, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but not so coarsely and covered with pale ochreous hair, propodeal pleuræ nearly hidden by the pale ochreous floccus, reticulated and with a few scattered shallow pits; *abdomen* with its tergum shining, rather indistinctly punctured, the punctures from two to five puncture widths apart, first tergite with its punctures not so close together as the

punctures on the elevated portion of the second and third tergites where the punctures are from two to five puncture widths apart, depressed portions of the second, third and fourth tergites almost impunctate, second tergite with its elevated portion down the middle : depressed portion :: 17 : 11, fifth tergite with its punctures coarse and as many as five or six puncture widths apart, pygidium not planate but convex, nearly pointed at apex, tergum with inconspicuous dark brown or blackish hairs, first tergite with some pale hairs, tergum not fasciate, blackish to dark seal-brown.

Andrena (Andrena) tæniata new species.

Type.—No. 4,049. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (A.) peckhami* Cockerell.

Female.—Length 11 mm.; *body* black, mostly covered with whitish hairs; *head* with its facial line : transfacial line :: 63 : 79, axial line : temporal line :: 35 : 22, malar line : joint 3 of antennæ :: 2 : 10, elevated portion of malar space nearly wanting, head covered with whitish hairs, front dullish, finely longitudinally striate, with a well-developed crista, and not elevated along the inner margin of the fovea, fovea at most : ocellocular line :: 11 : 16, foveal band nearly wanting, fovea virtually contiguous to the upper end of the inner eye margin, distance between fovea and ocelli : ocellocular line :: 5 : 16, fovea not constricted near its middle, nearly parallel sided throughout and continued below as a shallow furrow down to a point apparently on the clypeal line, fovea whitish or pale ochreous, fovearea wanting, face shining, almost polished, punctured, the punctures close together and rather poorly defined, clypeus distinctly elevated above the apical margin, slightly convex, with a basal and lateral reticulate punctured margin and a nearly polished punctured disc, the punctures from nearly adjoining to five puncture widths apart, clypearea poorly developed, clypeus thinly hairy, its surface not hidden, labrarea emarginate beneath what appears to be the apical truncature, width at base : length down the middle :: 14 : 4, width at apex : length down the middle :: 7 : 4, greatest length of labrarea : width at base :: 5 : 14, labrarea at base two-thirds as wide as the labrum, the latter with a fringe of pale stramineous hairs, joint 3 of antennæ : 4 + 5 :: 10 : 9, joint 4 a little thicker than long, joint 5 as long as thick, the succeeding joints apparently a little longer than thick, antennæ blackish throughout, end joint distinctly longer than thick, mandibles typical, robust, extending to a little

beyond the middle of the labrum, black except for the apical half which is mostly dark reddish, palpi nearly typical; *thorax* covered with an abundance of whitish hairs which are shorter on the dorsulum where they are pale ochreous than the whitish hair on the mesopleuræ, dorsulum dullish, punctured and finely reticulated throughout, its punctures mostly from one to two puncture widths apart, notauli represented by a shiny line, mesopleuræ with whitish hairs throughout, punctured and finely reticulated, the punctures much sparser than on the dorsulum, scutel hairy and sculptured much like the dorsulum except for being more distinctly punctured, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ dark brownish, stramineous, polished, wing base partly blackish brown, subcosta blackish brown, stigma pale brownish stramineous, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, the second abscissa of the radius shorter than the first, nervulus forming an acute angle with the second abscissa of the discoidal vein and received by the first discoidal cell, legs blackish brown except for the claws which are more or less brownish stramineous, legs covered with whitish hairs, the hairs on the tarsi and fore tibiæ dark, scopa typical, its hairs of a pale ochreous or whitish hue throughout, with the hairs at base above slightly darkened, hind metatarsi at most apparently as wide as mid metatarsi; *propodeum* with its enclosure poorly defined, triangular, finely reticulated, not at all rugose, rest of upper face of propodeum sculptured somewhat like the mesopleuræ but more closely punctured and covered with whitish hair, propodeal pleuræ delicately reticulated and punctured, the punctures rather coarse and from two to eight or more puncture widths apart, not hidden by the whitish floccus; *abdomen* with its tergum shiny, punctured and delicately reticulated, first tergite with its punctures finer and closer together than on the propodeal pleuræ, the punctures of the depressed portion closer together than on the rest of the tergite, on the elevated portion of the second, third and fourth tergites the sculpture is denser than on the elevated portion of the first tergite, on the depressed portions of the second, third and fourth tergites the sculpture is mostly hidden, second tergite with its elevated portion down the middle : depressed portion :: 19 : 9, fifth tergite with its sculpture coarser, its punctures not so well defined as on the preceding tergites, pygidium brownish

with a blackish apical half, slightly convex at apex where it is finger shaped in outline, tergum with inconspicuous blackish and whitish hairs, second, third and fourth tergites with a well-defined apical whitish hair band, fimbria pale brownish stramineous.

Andrena (Andrena) yumorum new species.

Type.—No. 4,019. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California (E. Norton).

Presumably related to *A. (A.) micranthophila* Cockerell.

Male.—Length 13.5 mm.; *body* black, mostly covered with black hair; *head* with its facial line : transfacial line :: 77 : 94, axial line : temporal line :: 42 : 21, temples rounded, subtrapezoidal, malar line : joint 3 of antennæ :: 2 : 12, elevated portion of malar space much shorter than the depressed portion, head covered with long slender hairs throughout, clypeal hairs and a tuft adjoining mandibles whitish, supraclypeal area and area around base of antennæ with a mixture of whitish and blackish hairs, mandibles and labrum with pale hairs, rest of head with black hairs, front partly sparsely pitted, mostly coarsely striate, ocellocular line : ocelloccipital line :: 20 : 9, face shining, covered with distinct, adjoining or nearly adjoining punctures, clypeus apparently slightly elevated directly above the apical margin, almost polished, convex except on the apical half down the middle where it is apparently slightly concave, and punctured like the face, sculpture of the clypeus nearly hidden by the moustache, labrarea nearly triangularly emarginate on its inferior aspect, its anterior aspect truncate, width at base : length down the middle :: 14 : 7, width at apex : length down the middle :: 6 : 7, length down the middle : greatest length :: 7 : 8, labrarea at base apparently at least twice as wide as the labrum, the latter with a fringe of golden hairs, joint 3 of antennæ : joint 4 :: 12 : 7, joint 4 as long as thick, following joints a little longer than thick by measure although appearing distinctly longer than thick, dullish, flagel nearly straight in outline, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrum, black except for the apical half which is mostly dark reddish, palpi nearly typical; *thorax* covered with an abundance of pale and black hairs, hairs of dorsulum shorter than hair of mesopleuræ, dorsulum distinctly punctured, dullish compared with the face, its punctures smaller and closer together than on the face, in addition covered with black hairs except along the edges where there are pale ochreous hairs, notauli represented by a shining line, mesopleuræ with whitish

hairs except along the hind edge where the hair is black, not reticulated but covered with adjoining punctures that are larger than on the dorsulum, scutellum with black hairs and sculptured much like the dorsulum except for a border of pale hairs like on the mesopleuræ, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser and nearly all the hairs are pale ochreous, tegulæ blackish brown, polished, bordered with black hairs except on the anterior third where the hairs are mostly pale ochreous, wing base mostly dark brownish stramineous, subcosta blackish, stigma dark brown with a blackish tinge, rest of veins dull brownish stramineous with a blackish tinge, first recurrent vein received by the second submarginal cell before the middle and at least half again as near to the second transverse cubitus as the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial forming an acute angle with the first abscissa of the discoidal vein, membrane in median and submedian cells nearly colorless, rest of membrane with a distinct brownish tinge, the broad apical margin darkest, legs blackish excepting the tarsi and hind tibiæ which are rather dark blackish brown, legs covered with blackish and brownish hairs except femora and coxæ which have more or less pale hair, hind metatarsi at most hardly wider than midmetatarsi and nearly half as wide as hind tibiæ at apex of the latter; *propodeum* with its enclosure poorly defined, coarsely rugose on its superior aspect, as many as 21 longitudinal carinæ present, truncate at apex, its posterior face finely reticulate, rest of upper face sculptured somewhat like the mesopleuræ but with adjoining pits rather than punctures and covered with long black hair, propodeal pleuræ sculptured apparently like the upper face, the sculpture nearly hidden by the uniformly distributed black hairs; *abdomen* with its tergum polished, blackish, with dark brownish depressed margins, distinctly punctured, the punctures from nearly adjoining to four puncture widths apart on the first tergite, second, third and fourth tergites punctured much like the first, second tergite with its elevated portion down the middle : depressed portion :: 38 : 9, fifth tergite with its basal blackish portion covered with well-defined punctures that are as many as three puncture widths apart, rest of fifth tergite and exposed portion of sixth and seventh tergites dark brown or blackish, anal process broadly truncate at apex, shallowly emarginate, tergum with rather conspicuous black nearly erect hairs that are not supplemented on the sides of the second, third and fourth tergites by apical hair bands, hair at apex of abdomen blackish brown.

Andrena (Parandrena) austrocalifornica new species.

Type.—No. 4,020. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (P.) cyanosoma* Cockerell, var.

Female.—Length 8.5 mm.; *body* dark greenish, almost completely covered with short whitish hairs; *head* covered with short hair that is mostly whitish, the only dark or blackish hairs are sparsely scattered along the inner and lower edge of the foveæ, front longitudinally striate throughout except laterally on the lower half where it is reticulate and rather indefinitely punctured, fovea whitish except for a few erect dark hairs, at most almost exactly two-thirds as wide as the ocellocular line is long, attenuated below and reaching distinctly below the antennal line but not to the clypeal line, facial line : transfacial line :: 50 : 61, axial line : temporal line :: 26 : 16, joint 3 of antennæ : joints 4 + 5 :: 7 : 6, joints 4-8 inclusive apparently thicker than long, the remaining joints not much longer than thick, antennæ blackish except that beyond the fourth joint they are brownish beneath, antennæ dullish, end joint typical, clypeus convex, with adjoining and nearly adjoining punctures, clypeus appearing black, covered with sparse whitish hairs, clypearea wanting, labrarea nearly twice as wide at base as at apex and nearly as wide at apex as long down the middle, emargination triangular and shallow, not extending more than one-fifth the length of the labrarea from apex toward base, labrarea at base apparently somewhat more than one-third as wide as the labrum which latter has a fringe of golden hairs, base of mandibles and eye nearly adjoining, the malar space accordingly represented by not much more than a shining line, mandibles black with the apical half mostly reddish castaneous except for a blackish stain near the middle of the apical half, typical in shape, palpi slender, nearly typical; *thorax* covered with whitish hairs that are short and close together on the dorsum and long and more separated on the pleuræ and sternum, dorsulum covered with adjoining or nearly adjoining and not well-defined punctures, dullish, scutel sculptured much like the dorsulum, but more shining, metanotum seemingly reticulated, more coarsely sculptured than the dorsulum, tegulæ, costa, subcosta and stigma mostly blackish brown, rest of veins brownish stramineous, membrane with a distinct brownish tinge, second submarginal cell apparently longer than the first, second abscissa of cubitus apparently as long as the first transverse cubitus, nearly half as long as the third

and a little longer than the fourth abscissa of the cubitus, nervulus received by the median cell, nearly interstitial and forming an acute angle with the second abscissa of the median vein, legs dark brown, covered with whitish or pale ochreous hairs except on the scopa where the hairs of the upper half are brownish like the hairs at the base of hind tibiæ, inner side of hind metatarsus covered with golden brown hairs, scopa loosely arranged, almost typical, onychii dark brown, claws brownish stramineous the latter with brownish tips; *propodeum* with its enclosure funnel shaped, not well defined, rather coarsely reticulated except on its posterior face where it is finely reticulated, rest of propodeum more finely sculptured than the upper aspect of the enclosure, propodeal pleuræ fine reticulated and with a few indistinctly defined punctures, posterior face of propodeum with a narrow median, longitudinal sulcus; *abdomen* not fasciate, not sculptured like the dorsulum, much more finely sculptured, reticulate, in addition to the reticulation there are widely separated, rather indefinite punctures, second tergite depressed distinctly less than one-half but more than one-third, abdomen covered with fine whitish hair that is erect on the basal tergite and appressed elsewhere, depressed portions of second, third and fourth tergites more or less brownish toward the apex which latter is brownish stramineous, ventral aspect of third tergite somewhat brownish, fimbria dark brown, pygidium black, planate, indefinitely sculptured and with an indistinctly defined central area.

Andrena (Parandrena) mendosa new species.

Type.—No. 4,021. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California, no further data; on the locality label is a written j.

Has characters in common with *A. (P.) andreoides* (Cresson).

Female.—Length 8 mm.; *body* black, covered with whitish hairs; *head* covered with whitish hairs, with its facial line : transfacial line :: 43 : 72, axial line : temporal line :: 22 : 13, front longitudinally finely striate, foveal hairs whitish, fovea at most half as wide as the ocellocular line is long, fovea attenuated below, extending to or a little below the clypeal line, separated from the eye margin near its upper end by a sloping nearly bare space that is nearly one-sixth as wide as the ocellocular line is long, joint 3 of antennæ : 4 + 5 :: 8 : 6, joints 4–10 inclusive wider or apparently wider than long, terminal joint longer than wide and typical, antennæ black or blackish except beneath on the apical half where they are coffee-brown, face

seemingly sculptureless except for distinct punctures that are apparently at most not more than two puncture widths apart, clypeus convex, almost gabled down the middle, with a broad highly polished clypearea somewhat like in *A. (A.) miserabilis* Cresson, on each side of the clypearea and above the latter the clypeus is mostly finely reticulated and punctured, the punctures mostly two to three puncture widths apart, clypeus almost bare, labrarea triangular, pointed at apex, at most between one-third and one-fourth as long down the middle as wide at base, labrarea apparently not more than one-third as wide as the labrum, the latter with a fringe of golden hairs, length of malar line : length of joint 3 of antennæ :: 2 : 8, the elevated portion of the malar space apparently no longer than the depressed portion, mandibles typical, robust, not extending to the outer edge of the labrum, with their basal half black, the apical half mostly reddish castaneous, palpi slender, nearly typical; *thorax* covered with whitish hairs throughout, dorsulum finely reticulated, its punctures shallow and from two to six or more puncture widths apart, notauli represented by impressed lines, scutellum with its anterior half mostly polished and sparsely punctured, its posterior half finely sculptured, metanotum indefinitely sculptured, tegulæ pale brownish stramineous, wing base darker, subcosta blackish brown, costa dark brown, stigma pale yellowish brown, rest of veins dark brownish stramineous, membrane with a strong brownish tinge, second submarginal cell distinctly shorter than the first, second abscissa of cubitus apparently hardly longer than half of the length of the first transverse cubitus and about one-fifth the length of the third abscissa and exactly as long as the fourth abscissa of the cubitus, nervulus received by the median cell and forming an acute angle with the second abscissa of the median vein, legs black covered with whitish hairs, hair of tibiæ and tarsi rather ochreous, scopa compact, mostly whitish, brownish at base, most of its hairs branched, tarsi and claws dark brownish stramineous; *propodeum* with its enclosure poorly defined, funnel shaped, finely reticulated, upper aspect of propodeum outside of the enclosure finely and coarsely reticulated, pleuræ of the propodeum finely reticulated and with a few punctures; *abdomen* shining, almost polished, delicately reticulated, more finely and sparsely punctured than the dorsulum, second tergite depressed between one-third and one-fourth, abdomen inconspicuously covered with fine whitish hair, second, third and fourth tergites with a distinct apical fringe of white hair that is interrupted in the middle of the second and third tergites, apical margin of fourth tergite brownish,

other depressed margins black, fimbria whitish with an ochreous tinge, pygidium black.

Other Locality.—Nevada (H. K. Morrison).

Andrena (Parandrena) olivacea new species.

Type.—No. 4,022. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (P.) perchalybea* Viereck.

Female.—Length 9.5 mm.; *body* greenish and almost completely covered with whitish pubescence, compared with the original description of *A. (P.) perchalybea* Viereck this species differs as follows: *head* covered with long hair that is whitish throughout, front longitudinally striate except above the antennal scrobes where it is indefinitely reticulate and sparsely punctured, fovea whitish, at most hardly more if more than half as wide as the ocellocular line is long, fovea hardly attenuated below and extending only a little below the antennal line, facial line : transfacial line :: 57 : 72, axial line : temporal line :: 31 : 20, joint 3 of antennæ : joints 4 + 5 :: 9 : 7, black apical third of clypeus separated from the greenish basal portion by a coppery zone, brownish part of antennæ pale yellowish brown; *thorax* covered throughout with whitish hairs, dorsulum with deep punctures, bounding veins of stigma, stigma and costa yellowish stramineous, rest of veins pale brownish stramineous, membrane almost colorless, with a yellowish brown tinge, hair of the black legs more or less whitish with an ochreous tinge, inner side of metatarsi with brownish hairs, plumose hairs of scopa darker than the simple hairs, rather ochreous except at the base of the tibiæ where they are brownish, claws brownish stramineous throughout except that the hind claws are castaneous at their tips; *propodeum* with its enclosure finely sculptured on the posterior aspect, the upper aspect longitudinally rugose on each side of a median longitudinal carina, rest of upper aspect of propodeum coarsely reticulated, rest of propodeum finely reticulated and with widely separated shallow punctures; *abdomen* with its pygidium planate otherwise apparently as in the original description with which this species is compared.

Allotopotype.—The Academy of Natural Sciences of Philadelphia. Length 6.5 mm.; *body* as in the female as described above; *head* with its facial line : transfacial line :: 46 : 53, axial line : temporal line :: 26 : 15, temples neither carinate nor angulate but subtrapezoidal, front striatopunctate, clypeus convex, its punctures adjoining or almost adjoining, clypeus blackish along the

anterior edge, hairs of clypeus forming a moustache that nearly obscures the sculpture, clypearea wanting, malar space virtually wanting, represented by not much more than a shining line, joint 3 of antennæ : joint 4 :: 7 : 3 and : joints 4 + 5 :: 7 : 8, joint 6 and succeeding joints distinctly longer than wide, joint 4 distinctly wider than long, antennæ blackish brown throughout, dullish, end joint typical, clypearea semicircular emarginate to the base, appearing as a nearly triangular tubercle on each side of the emargination, at most the labrarea is hardly half as long as wide at base, otherwise the labrum is much the same as in the female, mandibles robust not so greatly attenuated as in typical *Andrena*, simple, black, apical half mostly reddish castaneous, palpi apparently as in the female; *thorax* as in the female except that the dorsulum is mostly coppery and not so distinctly or closely punctured, nervulus more nearly interstitial but still received by the median cell, stigma and costa dark brownish, the stigma a brighter brown than the costa, otherwise the wings are similar to the wings in the female, legs black, with whitish hairs even on the inner side of metatarsi and all over hind tibiæ, the latter at most distinctly less than twice as wide as greatest width of hind metatarsi, otherwise the legs are much the same as in the female; propodeum as in the female except that the upper aspect both outside and inside the enclosure is rather finely reticulated and that the rather coarse rugæ on each side of the median longitudinal carina in the female are here represented by poorly developed rugæ on each side of the median longitudinal carina; abdomen very similar to the female abdomen, hair at apex whitish with an ochreous tinge, anal process truncate with a pale stramineous margin.

Andrena* (*Parandrena*) *perchalybia new species.

Type.—No. 4,023. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Washington State (H. K. Morrison).

Related to *A. (P.) cyanosoma* Cockerell var.

Female.—Length 9.5 mm.; *body* dark greenish, almost completely covered with dark brown or blackish hair; *head* covered with long hair that is mostly brownish but largely blackish on the face, front longitudinally striate down the middle, punctured and indefinitely reticulate on the sides, fovea seal-brown, at most less than one-half as wide as the ocellocular line is long, but more than one-third as wide as the latter line is long, fovea attenuated below and reaching to or a little below the antennal line, facial line : transfacial line ::

57 : 71, axial line : temporal line :: 33 : 20, joint 3 of antennæ : joints 4 + 5 :: 11 : 9, joints 4-8 inclusive apparently thicker than long, the remaining joints not much longer than thick, antennæ blackish except that beyond the fourth joint they are brownish beneath, antennæ dullish, end joint typical, clypeus convex, with almost adjoining and adjoining punctures, clypeus appearing blackish, almost hidden by the dark brown pubescence, clypearea wanting, labrarea at most apparently a little more than half as long as wide at base and shaped somewhat thus, \mathfrak{b} , *i.e.*, like a capital b lying on its straight side, labrarea at base apparently somewhat more than one-third as wide as the labrum which latter has a fringe of golden brown hairs, base of mandibles and eye nearly adjoining, the malar space accordingly represented by not much more than a shining line, mandibles black with the apical half mostly blackish castaneous, typical in shape, palpi slender, nearly typical; *thorax* covered with black or dark brown hairs except around the tubercles where there is some pale, apparently ochreous hair, dorsulum finely reticulated, also with shallow punctures that are as many as four puncture widths apart, scutel and metanotum sculptured much like the dorsulum, the metanotum, however, not so definitely sculptured as the scutel, tegulæ and subcosta blackish-brown, bounding veins of the stigma almost concolorous with the subcosta, stigma yellowish brown, rest of veins brownish stramineous, membrane with a distinct brownish tinge, second submarginal cell apparently longer than the first, second abscissa of cubitus apparently as long as the first transverse cubitus, nearly half as long as the third and a little longer than the fourth abscissa of the cubitus, nervulus received by the median cell and forming an acute angle with second abscissa of the median vein, pubescence of the blackish legs pale brown except that the hair of the fore femora is fuscous like the hair at the base of hind tibiæ; scopa as in *A. (P.) subchalybea* Viereck except that the simple hairs are ochreous rather than whitish, hair on inner side of hind metatarsus golden brown, onychii and claws brownish stramineous, the latter with castaneous tips; *propodeum* with its enclosure funnel shaped, well defined, finely sculptured and with an irregular net work of rugæ in addition to the underlying sculpture, rest of propodeum except its pleuræ sculptured much like the enclosure but more coarsely so, propodeal pleuræ finely reticulated and with a few crater-like punctures, posterior face of propodeum with a narrow median, longitudinal sulcus; abdomen not fasciate, sculptured like the dorsulum but with distinctly smaller punctures that are apparently,

in part, more widely separated, second tergite depressed distinctly less than one-half but more than one-third, abdomen covered with fine almost whitish hair that is erect on the basal tergite and appressed elsewhere, depressed portions of second, third and fourth tergites more or less brownish stramineous, ventral aspect of third tergite somewhat brownish, fimbria fuscous brown, pygidium convex, black, without an impressed line or other definite sculpture.

Andrena (Parandrena) subchalybea new species.

Type.—No. 4,024. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Has characters in common with *A. (P.) manifesta* (Fox).

Female.—Length 8.5 mm.; *body* greenish, covered with whitish and black pubescence; *head* with its facial line : transfacial line :: 56 : 64, axial line : temporal line :: 28 : 9, covered with blackish brown pubescence except on the vertex where it is whitish tinged with brown, front longitudinally striate and reticulate, foveal hairs seal-brown, fovea at most less than half but more than one-third as wide as the ocellocular line is long, separated from the eye margin near its upper end by a sloping, nearly bare space that is nearly one-sixth as wide as the ocellocular line is long, fovea attenuated below and almost reaching the antennal line, joint 3 of antennæ distinctly longer than 4 + 5, but distinctly shorter than 4 + 5 + 6, joints 4–10 inclusive wider or apparently wider than long, terminal joint longer than wide and typical, antennæ blackish except the flagel which beyond the third joint is brownish beneath, face with shallow nearly adjoining punctures, clypeus indistinctly punctured, appearing rippled, anterior half of clypeus dark and bronzy almost hidden by the pubescence, clypearea wanting, clypeus convex, labrarea at most not more than half as long as wide at base, triangularly emarginate, labrarea apparently somewhat less than one-third as wide as the labrum which latter has a fringe of shining brownish stramineous hairs, base of mandibles and eye nearly adjoining, the malar space accordingly represented by not much more than a shining line, mandibles robust, blackish, mostly castaneous beyond the basal half, typical in shape, palpi slender nearly typical; thorax covered with whitish pubescence, tinged with brown on the pleura, thoracic pubescence mixed with black or blackish hairs that are easily overlooked on the dorsulum, all hairs black on anterior and posterior margin of mesopleuræ, dorsulum finely reticulated, also with shallow punctures that are as many as five puncture widths

apart, scutellum and metanotum sculptured much like the dorsum, the metanotum with the sculpture indefinite on its posterior edge, tegulae and wing base dark brown, subcosta and stigma almost concolorous, dark brown, rest of veins and the membrane brownish stramineous, second submarginal cell apparently longer than the first, second abscissa of cubitus apparently as long as the first transverse cubitus, nearly half as long as the third and nearly one and one-half times as long as the fourth abscissa of the cubitus, nervulus received by the median cell and forming an acute angle with the second abscissa of the median vein, pubescence of the brownish to black legs whitish with a brownish tinge excepting the fore legs, the pubescence of which is mostly fuscous, like the hairs at the base of the scopa, scopa loose and nearly typical in character on the lower half where its hairs are simple and whitish, atypical on the upper half where the hairs are mostly branched and brownish, hairs of the inner side of hind metatarsus silvery and pale golden, onychii and claws pale stramineous, the latter with dark tips; *propodeum* with its enclosure funnel shaped, well defined, finely sculptured and with an irregular net work of rugae in addition to the underlying sculpture, rest of propodeum except its pleurae sculptured much like the enclosure but more coarsely so, propodeal pleurae finely reticulated and with a few crater-like punctures, posterior face of propodeum with a narrow, median, longitudinal sulcus; *abdomen* sculptured like the dorsum but with distinctly smaller punctures that are apparently, in part, more widely separated, second tergite depressed distinctly less than one-half but more than one-third, abdomen covered with fine whitish hair that is erect on the basal tergite and appressed elsewhere, depressed portions of second, third and fourth tergites more or less brownish stramineous, ventral aspect of third tergite brownish, fimbria pale brown, pygidium distinctly longer than wide at base, planate, rounded at apex, with a finely sculptured enclosure, the sculpture of which resembles stippling, base of pygidium pale brown followed by dark brown, most of pygidium black.

Andrena (Parandrena) submoesta new species.

Type.—No. 4,025. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California; no further data; on the locality label is a written "u."

Related to *A. (P.) subchalybea* Viereck.

Female.—Length 7 mm.; *body* greenish and clothed with whitish

hairs, compared with the original description of *A. (P.) subchalybea* Viereck this species differs as follows: *head* with its facial line : trans-facial line :: 40 : 57, axial line : temporal line :: 23 : 13, covered throughout with whitish hairs, front finely longitudinally striate, frontal crista well developed, foveal hairs ochreous, fovea extending nearly to the antennal line, joint 3 of antennæ : 4 + 5 :: 7 : 6, flagel beyond the sixth joint rather pale brownish beneath, face with indistinct punctures that are as many as five or more puncture widths apart and indistinctly reticulated, clypeus sculptured much like the face, clypeus mostly faintly bronzy, its tegument easily seen through the rather thin pubescence, labrarea subtruncate, almost pointed at apex, labral fringe golden; *thorax* including pleuræ with whitish hairs except on the tergum where the hairs have an ochreous tinge, subcosta blackish, stigma and rest of veins almost concolorous, dark brownish stramineous, stigma, costa and radial vein darkest, second abscissa distinctly shorter than the first transverse cubitus, less than half as long as the third and hardly longer than the fourth abscissa of the cubitus, nervulus interstitial and forming an acute angle with the first abscissa of the median vein, legs brownish, covered with whitish or pale ochreous hairs, hairs of femora and tibiæ rather ochreous, scopa almost typical in character, mostly with long, simple, ochreous hairs, hairs along the upper edge shorter, darker and branched, hair at base of scopa brownish, hair on under side of metatarsi golden, onychii and claws as well as the small tarsal joints yellowish stramineous, the claws with dark tips; *propodeum* with its enclosure poorly defined, finely, rather indistinctly reticulate except for some feeble rugæ down the middle and along the basal margin, rest of the upper aspect or the propodeum more distinctly reticulated; *abdomen* with the second tergite depressed hardly more than one-fourth, tergites satiny, ventral aspect of first and second tergites also brownish, second, third and fourth tergites with a distinct apical band of appressed whitish hairs that is interrupted medially on the second and third tergites, fimbria pale golden brown, pygidium mostly hidden by the fimbria, its apex nearly pointed and blackish.

Andrena (Ptilandrena) francisca new species.

Type.—No. 4,026. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California. (No further data.)

Related to *A. (P.) cærulea territa* Cockerell.

Female.—Length 9.5 mm.; *body* bluish, covered mostly with

blackish hairs; compared with the original description of *A. (P.) pediculihirta* Viereck this species differs as follows: *head* with its facial line : transfacial line :: 60 : 67, axial line : temporal line :: 27 : 15, covered with blackish hairs except in the foveæ, the latter with seal-brown appressed hairs and long blackish hairs, fovea at most hardly one-half as wide as the ocellocular line is long, extending only a little below the antennal line, separated from the eye margin by a nearly bare band that is nearly one-sixth as wide as the greatest foveal width, front not elevated along the inner edge of the fovea, joint 3 and succeeding joints of antennæ lost but probably the antennæ are as in the species with which this is compared, clypearea wanting, clypeus finely reticulated, sparsely, indistinctly punctured, more sparsely and more indistinctly punctured than the face, blackish except basal half which is greenish and coppery, labrarea subemarginate, at most nearly three times as wide at base as long, the emargination extending nearly one-fourth the distance from apex to base, labrarea about half as wide at apex as at base, malar line short, its proportion probably the same as in the species with which this is compared, mandibles extending to the outer edge of the labrum, black, apical half partly blackish castaneous; *thorax* covered with blackish hairs except on the dorsulum where the hairs are mostly ochreous interspersed with black hairs and on the scutel and the metanotum where the hairs are all ochreous, dorsulum dullish, finely reticulated, somewhat more closely punctured than in the species with which this is compared, notauli represented by almost elevated lines, scutel sculptured much like the dorsulum, metanotum indefinitely sculptured, wing base blackish brown, stigma throughout and all veins except subcosta and membrane dull brownish stramineous, nervulus interstitial, forming an acute angle with the second abscissa of the median vein, legs blackish brown, covered with blackish hairs except on the inner surface of the hind metatarsi where it is pale seal-brown, scopa with blackish, feathery hairs throughout; *propodeum* with its enclosure separable from the surrounding area only by reason of being impunctate, without a median, longitudinal raised line, rest of upper aspect of propodeum greenish blue, sparsely punctured and reticulated, the reticulation nearly the same as in the enclosure, most hairs of upper aspect of propodeum ochreous, rest of propodeum with blackish hairs, propodeal pleuræ greenish blue; *abdomen* with its tergum bluish, not fasciate but covered throughout with blackish hairs except on the first and second segments where there are some ochreous

hairs, fimbria blackish brown, pygidium blackish, slightly convex near apex and nearly pointed.

Andrena (Ptilandrena) nubilifascia new species.

Type.—No. 4,027. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Related to *A. (P.) pallidifovea* Viereck.

Female.—Length 11.5 mm.; *body* black, mostly covered with whitish hairs, compared with the original description of *A. (P.) pediculihirta* Viereck, this species differs as follows: *head* with its facial line : transfacial line :: 35 : 23, covered with whitish hairs except on the labrum and mandibles where the hairs are brownish, foveæ with whitish hairs throughout, separated from the eye margin near its upper end by a nearly bare band that is nearly one-fourth as wide as the greatest foveal width, front not elevated along the inner edge of fovea, joint 3 of antennæ : 4 + 5 :: 10 : 9, joints 4 and 5 apparently thicker than long, the succeeding joints longer than thick, face nearly as closely and nearly as distinctly punctured as the clypeus, the punctures seemingly at most two puncture widths apart, clypeus indistinctly reticulated, and covered with distinct adjoining or almost adjoining punctures, clypeus hardly elevated above the apical margin, labrarea a little more than three times as wide at base as long down the middle and a little more than half as wide at apex as at base, malar line : joint 3 of antennæ nearly :: 1 : 10; *thorax* covered with thin whitish hairs, dorsulum dullish, sculptured much like the clypeus but with its reticulation more distinct, notauli represented by a shining line, scutel mostly more densely sculptured than the dorsulum, its anterior edge shining, metanotum sculptured much like the posterior half of the scutel, nervulus received by the first discoidal cell, nearly interstitial, forming an acute angle with the first abscissa of the discoidal vein, legs covered with dark brown to blackish hairs except on the femora where most of the hair is pale ochreous and on fore tarsi where it is pale golden brown, scopa with blackish brown branched hairs throughout, greatest width of mid metatarsi : greatest width of hind metatarsi :: 11 : 12; *propodeum* with its upper aspect outside the enclosure sculptured almost like the dorsulum but not so distinctly punctured; *abdomen* almost polished and distinctly punctured, with three thin white fasciæ outside of which the tergites are covered with blackish brown hair excepting the first and second and extreme sides of the third and fourth tergites where there is more

or less pale hair, punctures of first tergite spaced nearly as on the dorsulum, second tergite with smaller, closer punctures than the first tergite, indistinctly reticulate, length from base of punctured portion to apex of second tergite : length of depressed margin down the middle :: 28 : 8, third tergite sculptured much like the second, fourth tergite less distinctly punctured but more distinctly reticulated than the preceding tergite, fifth tergite dullish, reticulated and with punctures that are nearly as large and as sparsely or more sparsely distributed than on the first tergite, fimbria dark seal-brown, pygidium slightly convex, nearly truncate at apex, blackish, without an enclosure, indefinitely sculptured, base of pygidium pale brown.

Andrena (Ptilandrena) pediculihirta new species.

Type.—No. 4,028. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Southern California (H. K. Morrison).

Female.—Length 9.5 mm.; *body* black, covered with pale ochreous hairs; *head* with its facial line : transfacial line :: 59 : 73, axial line : temporal line :: 28 : 15, covered with pale ochreous almost whitish hair except in the upper half of the foveæ and on the labrum, front rather coarsely longitudinally striate, foveæ with whitish hairs on the lower half, the upper half with its hairs mostly pale seal-brown, foveæ at most a little more than half as wide as the ocellocular line is long, attenuated below and extending to or close to the clypeal line, hardly separated from the eye margin near its upper end, front welled along the inner edge of fovea, joint 3 of antennæ : 4 + 5 :: 9 : 8, joints 4–10 inclusive apparently thicker than long, the succeeding joints longer than thick, terminal joint typical, antennæ blackish throughout, face shining, indistinctly reticulated, rather indistinctly punctured, the punctures as many as three puncture widths apart, clypeus convex with a narrow, dullish reticulated clypearea down the middle, but not extending to the apex, clypeus on each side of and below the clypearea reticulated and punctured, more closely and distinctly punctured than the face, clypeus decidedly elevated above the apical margin, the elevated edge with a shining border that is nearly sculptureless, clypeus thinly hairy its surface not at all hidden by the hairs, labrarea truncate, nearly four times as wide at base as long down the middle and apparently exactly as long down the middle as wide at apex, labrarea at base nearly half as wide as the labrum, the latter with a fringe of golden brown hairs, malar line : joint 3 of antennæ :: 15 : 8, the elevated portion nearly as long as the depressed portion, mandi-

bles typical, robust, not quite extending to the outer edge of the labrum, with their basal half black, apical half mostly dark reddish, palpi slender, nearly typical; *thorax* covered with pale ochreous, almost whitish hairs, dorsulum shining, partly indistinctly reticulated, partly polished, punctured, the punctures from two to five puncture widths apart, notauli represented by an impressed line, scutel with its anterior half mostly shining almost polished and punctured somewhat like the dorsulum, its posterior half mostly dullish and finely reticulated in addition to being punctured like the anterior half, metanotum sculptured somewhat like the posterior half of the scutel, tegulæ blackish, wing base partly blackish, subcosta and lower edge of stigma blackish, stigma dark reddish brown, stramineous, rest of veins and membrane dull brownish stramineous, first recurrent vein received by the second submarginal cell before the middle and not as near to the first transverse cubitus as the latter is to the stigma on the radius, nervulus received by the median cell, nearly interstitial and forming an acute angle with the second abscissa of the median vein, legs black, tarsi and claws mostly brownish, legs covered with pale ochreous hairs, mid metatarsi distinctly wider than hind metatarsi, scopa rather compact, nearly obscuring the tibia, lower edge with nearly whitish hairs, base of scopa with pale brownish hairs; *propodeum* with its enclosure finely reticulate and with a median, longitudinal raised line, rest of superior aspect of propodeum with a coarse network in addition to indistinct fine reticulation, propodeal pleuræ with very fine reticulations, almost polished, and partly with sparse punctures; *abdomen* shining, indistinctly punctured and reticulated, second tergite depressed more than one-third but less than one-half, tergum with dark brownish appressed hairs, and three white hair bands the first of which is interrupted in the middle, fimbria whitish at base pale seal-brown beyond the middle, pygidium convex, black, finely but indefinitely sculptured, nearly pointed at apex without apparent impressed lateral lines.

Andrena (Scrapter) alamonis new species.

Type.—No. 4,029. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Alamogordo, New Mexico, April 16, 1902 (H. L. Viereck). Related to *A. (S.) imitatrix* Cresson.

Female.—Length 10 mm.; *body* black, covered with whitish hairs; *head* with its facial line : transfacial line :: 60 : 74, axial line : temporal line :: 32 : 19, black, its pubescence whitish except along

the lower edge of the labrum where it is brownish, fovea with whitish pubescence, fovea nearly three-fourths as wide along the ocellocular line as the latter is long, hardly separated from the eye margin where the ocellocular line joins the latter, fovea not trenchant, impunctate but represented by a shining space that is widest and almost angulate at a point nearly half way between the anterior ocellus and the antennal line, fovea apparently extending a little below the clypeal line and distinctly extending far below the antennal line, clypearea present, the punctures on each side of it as many as five or more puncture widths apart, elsewhere on the clypeus the punctures are from adjoining to one and two puncture widths apart, clypeus convex, polished, indistinctly or not at all reticulate, mandibles almost entirely blackish or entirely blackish, palpi typical, joint 3 of antennæ slightly though distinctly shorter than joints 4 + 5 or joint 3 : 4 + 5 :: 7 : 8, antennæ blackish brown, labrarea truncate, subemarginate, apparently half again as long down the middle as wide at apex and at least three times as wide at base as at apex; *thorax* black, with whitish pubescence that has an ochreous tinge on the dorsal surface, dorsulum shining, reticulate and distinctly punctured, the punctures from nearly adjoining to five or more puncture widths apart, scutel sculptured like the dorsulum, metanotum more densely sculptured than the scutel, legs pubescent like the thorax except that the hairs are mostly darker with a golden to brownish golden tinge, scopa pale golden, its hairs not so dense as to obscure the tegument, the arrangement and character typical, tarsi rather pale brown except the metatarsi which are very dark brown, hind femora with golden brown hairs at apex, tegulæ brownish stramineous, wing base blackish, stigma dark brown, subcosta blackish, veins brownish stramineous, membrane with a brownish stramineous tinge, first recurrent vein received by the second submarginal cell nearer the second transverse cubitus than the first transverse cubitus is to the stigma, nervulus received by the median cell, nearly interstitial and forming an acute angle with the second abscissa of the median vein; *propodeum* regulose except for the enclosure which is plicate, somewhat as in *A. (Scapter) cratægi* Robertson, enclosure defined by the difference in sculpture and with a median longitudinal low crista; *abdomen* polished, black, without a metallic tinge, depressed portion of tergites brownish, the tergites covered with setigerous punctures that are seemingly sparser and distinctly smaller than on the dorsulum; *abdomen* appearing bare without fasciæ, its pubescence whitish

except that the fimbria is pale golden, fifth tergite punctured and dullish, reticulate, pygidium blackish, slightly convex, with a lateral impressed line on each side near the base, smooth and apparently finely sculptured.

Recalls *A. (A.) cressonii* Robertson and allies, but is no doubt properly placed in species group *imitatrix*.

Andrena (Trachandrena) marioides new species.

Type.—No. 4,030. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Nevada (Morrison).

Related to *A. (T.) cleodora* Viereck.

Female.—Length 9 mm.; *head* black, its pubescence ochreous except along the lower edge of the labrum where it is brownish, fovea with pale ochreous pubescence, a little more than two-thirds as wide along the ocellocular line as the latter is long, narrowly separated from the eye margin where the ocellocular line joins the latter, fovea deep its boundary along the front almost vertical, fovea rather well developed, punctured, angulate at a point nearly half way between the anterior ocellus and the antennal line, fovea extending distinctly below the antennal line but apparently falling short of the clypeal line, clypearea wanting, clypeal punctures distinct, adjoining or almost adjoining all over, clypeus convex, polished, apparently not at all reticulate, mandibles black, reddish castaneous near the middle and at apex, palpi typical, joint 3 of antennæ : 4 + 5 :: 4 : 5, antennæ blackish brown, labrarea truncate, apparently as wide at apex as long down the middle and at least two and one-half times as wide at base as at apex; *thorax* black, and with ochreous pubescence that has a reddish tinge on the dorsal surface, dorsulum shining, reticulate and distinctly punctured, its punctures from one to five or more puncture widths apart, scutellum sculptured like the dorsulum, metanotum densely sculptured, legs pubescent like the thorax except that the hairs of the tibiæ and tarsi are more golden than ochreous, scopa pale golden its hairs almost dense enough to obscure the tegument, their arrangement and character typical, tarsi and hind tibiæ rather stramineous, rest of legs blackish brown, tegulæ and wing base brownish stramineous, stigma pale brownish stramineous, subcosta blackish brown, border of stigma and remaining veins brownish stramineous, darker than the stigma, first recurrent vein received by the second submarginal cell nearer the second transverse cubitus than the first transverse cubitus is to the stigma, nervulus interstitial and forming an acute

angle with the first abscissa of the discoidal vein; *propodeum* with a well-defined enclosure that is finely reticulate and traversed by rather longitudinal crooked and delicate rugæ, rest of propodeum more coarsely rugose than the enclosure which latter ends in a sharp edge at apex; *abdomen* polished, reddish with blackish stains down the middle of the tergum, without a metallic tinge, depressed portion of second tergite down the middle : elevated portion :: 17 : 7, second, third and fourth tergites with a distinct lateral fascia as in *A. (T.) salicifloris* Cockerell, abdomen sparsely inconspicuously punctured, the punctures of the elevated portion more distinct than those of the depressed portion, abdominal pubescence whitish with an ochreous tinge, fimbria yellowish golden, fifth tergite dullish, punctured, no definite sculpture between the punctures, planate with a triangular dark reddish brown area that is indistinctly punctured separated from a blackish margin by an impressed line on each side of the pygidium.

In a paratopotype the nervulus is received by the median cell and the first recurrent vein is received by the second cubital cell almost in the middle.

Other Locality.—A paratype from Ogden, Utah, May 16, 1915 (A. Wetmore) [U. S. Biological Survey], has the abdomen reddish throughout and may represent a pale race of this species.

Andrena (Trachandrena) nortoni new species.

Type.—No. 4,031. The Academy of Natural Sciences of Philadelphia.

Type Locality.—California, No. 10 (E. Norton).

Related to *A. (T.) swenki* Viereck and Cockerell.

Female.—Length 9 mm.; *body* black, mostly covered with bright ochreous hairs; *head* covered with bright ochreous hairs, with its facial line : transfacial line :: 62 : 73, axial line : temporal line :: 30 : 17, malar line : joint 3 of antennæ :: a little more than 1 : 8, elevated portion of malar space nearly as long as depressed portion, front polished and punctured, the punctures as many as three puncture widths apart, not elevated along inner foveal edge, fovea at most : ocellocular line :: 12 : 14, foveal band wanting, fovea virtually contiguous to the upper end of the inner eye-margin, distance between fovea and ocelli : ocellocular line :: 1.5 : 14, fovea decidedly constricted near its middle where it is apparently only one-fourth as wide as the greatest width of the fovea, the latter continued below the constriction as a narrowing furrow down to a point apparently on the clypeal line, fovea pale.

ochreous throughout, fovea widest a little below the middle of the fovea, angulated at its widest point where it is as wide as the fovea is wide opposite the angulation of the fovea, the latter polished and with a few large punctures, face polished, with large adjoining and nearly adjoining punctures, clypeus slightly elevated above the apical margin, convex, polished and punctured much like the face, clypearea present on the apical two-thirds of the clypeus, the latter thinly hairy, its surface not at all hidden by hairs, labrarea truncate, width at base : length down the middle and width at apex :: 10 : 4, labrarea at base half as wide as the labrum, the latter with a fringe of pale golden hairs, joint 3 of antennæ : 4 + 5 :: 8 : 10, joint 4 thicker than long, the succeeding joints longer than thick, antennæ blackish throughout, mandibles typical, robust, extending to the outer edge of the labrum, black except for the apical half which is clear, dark reddish, palpi nearly typical; *thorax* covered with an abundance of slender hairs which are reddish on the dorsum where they are shorter than the ochreous hairs on the mesopleuræ, dorsum dullish, finely reticulated, coarsely punctured, the punctures ranging from adjoining to one puncture width apart, notauli represented by an impressed dullish line, mesopleuræ with pale ochreous hairs, except along the upper margin where the hairs are reddish, finely reticulated and mostly covered with shallow, adjoining pits, scutellum hairy and sculptured much like the dorsum except for being less reticulate and distinctly shining, metanotum hairy and sculptured like the dorsum except that the sculpture is denser, tegulæ dark brownish stramineous, polished, wing base partly blackish brown, subcosta blackish brown, stigma brownish stramineous with a reddish tinge, rest of veins dull stramineous, with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and a little nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown except for the tarsi and hind tibiæ which are more or less brownish stramineous, legs covered with pale ochreous or golden hairs, scopa typical, its hairs of a golden hue, and concolorous throughout except the hairs at base above which are slightly darkened, hind metatarsi at most apparently as wide as midmetatarsi; *propodeum* with its enclosure feebly defined except at apex where its truncature is bounded by a carina, finely reticulated and in addition with a loose network of sharp rugæ on each side of a median longitudinal carina,

rest of upper face of propodeum sculptured somewhat like the mesopleuræ but with smaller pits, and covered with pale ochreous hair, propodeal pleuræ with sparse shallow excavations that are finely reticulated and almost hidden by the pale ochreous propodeal floccus; *abdomen* with its tergum polished, punctured, the puncture clear cut but small, from two to many puncture widths apart on the first tergite, from adjoining to one puncture width apart on the elevated portion of the second, third and fourth tergites where the punctures are larger than on the depressed portions and from one to four puncture widths apart on the depressed portions of the second, third and fourth tergites, second tergite with its elevated portion down the middle : depressed portion :: 6 : 16, fifth tergite shining reticulate, with its punctures from adjoining to four puncture widths apart, pygidium, black, planate and rounded at apex, tergum with inconspicuous pale hairs, second, third and fourth tergites with a broadly interrupted golden ochreous hair band, fimbria golden ochreous.

Allotopotype.—The Academy of Natural Sciences of Philadelphia.

Length 7 mm.; *body* black, mostly covered with bright ochreous hair; *head* covered with pale ochreous hairs throughout, with its facial line : transfacial line :: 49 : 61, axial line : temporal line :: 26 : 10, temples rounded, subtrapezoidal, malar line : joint 3 of antennæ :: 1.5 : 6, elevated portion of malar space shorter than the depressed portion, front dullish with adjoining, shallow pits that are reticulate, laterally striate-pitted, and striate, ocellocular line : ocell-occipital line :: 13 : 5, face dullish, indistinctly reticulate and with large rather coarse nearly adjoining or adjoining punctures, clypeus apparently not elevated directly above the apical margin, convex, polished and punctured much like the face, clypearea present but not well developed and confined to the anterior half, sculpture of the clypeus nearly hidden by the moustache, labrarea truncate, width at base : length down the middle :: 9 : 2.5, width at apex : length down the middle :: 4 : 2.5, labrarea at base apparently a little more than half as wide as the labrum, the latter with a fringe of pale golden hairs, joint 3 of antennæ : 4 :: 6 : 10, joint 4 and following joints from a little more than twice as long as thick to nearly twice as long as thick, dullish, flagel somewhat undulate in outline, antennæ blackish throughout, mandibles atypical, robust, extending to the outer edge of the labrum, black except for the apical half which is clear dark reddish, palpi nearly typical; *thorax* covered with an abundance of slender pale ochreous hairs, hairs of dorsulum seem-

ingly as long as hair of mesopleuræ, dorsulum dullish, finely reticulated, coarsely punctured, the punctures ranging from adjoining to three puncture widths apart, notauli represented by an impressed dullish line, mesopleuræ with pale ochreous hairs throughout, finely reticulated and mostly covered with shallow, adjoining pits, scutell hairy and sculptured much like the dorsulum, metanotum hairy and sculptured like the dorsulum except that the sculpture is denser, tegulæ dark blackish brown and brownish stramineous, polished, wing base mostly pale stramineous, subcosta brownish stramineous with a blackish tinge, stigma brownish stramineous with a reddish tinge, rest of veins dull stramineous with a blackish tinge, first recurrent vein received by the second submarginal cell beyond the middle and a little nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus interstitial and forming an acute angle with the first abscissa of the discoidal vein, legs blackish brown excepting the tarsi and hind tibiæ which are rather dark brownish stramineous, legs covered with pale ochreous hairs, hind metatarsi at most hardly wider than mid metatarsi and nearly half as wide as hind tibiæ at apex of the latter; *propodeum* with its enclosure feebly defined, not sharply truncate but truncate at apex, finely reticulated and in addition with about six crooked, longitudinal carinæ on each side of a nearly straight median longitudinal carina, rest of upper face sculptured somewhat like the mesopleuræ but with smaller pits and covered with pale ochreous hair, propodeal pleuræ sculptured apparently like the mesopleuræ the sculpture nearly hidden by the uniformly distributed pale ochreous hairs; *abdomen* with its tergum polished excepting the elevated portions of tergites which are partly reticulate but yet nearly polished, punctured, the punctures small and not clear cut, from two to many puncture widths apart on the first tergite, from one to three puncture widths apart on the elevated portion of the second, third and fourth tergites where the punctures are larger than on the depressed portions where the punctures are farther apart, second tergite with its elevated portion down the middle : depressed portion :: 10 : 8, fifth tergite with its basal blackish portion covered with poorly defined punctures that are as many as four puncture widths apart, rest of fifth tergite and exposed portion of sixth and seventh tergites stramineous, anal process dark brownish, emarginate, the emargination forming an obtuse angle, tergum with rather conspicuous pale ochreous hairs that are supplemented on the sides of the second, third and fourth

tergites by ochreous apical hair bands, hair at apex of abdomen pale ochreous.

Other Locality.—San José, California (Hold). One female paratype in the collection of The Academy of Natural Sciences of Philadelphia, Pennsylvania.

Andrena (Trachandrena) quintiliformis new species.

Type.—No. 4,032. The Academy of Natural Sciences of Philadelphia.

Type Locality.—Yosemite, California, June 24, 1902 (B. Chapman). Related to *A. (T.) quintilis* Robertson.

Female.—Length 9.5 mm.; *body* black covered with pale and blackish hairs; *head* with its facial line : transfacial line :: 60 : 74, axial line : temporal line :: 30 : 17, covered with pale ochreous hairs excepting most of the broad part of fovea and occiput where the hairs are brownish and on the labrum where the hairs are golden, front elevated along inner foveal edge, coarsely punctured the punctures from one to two puncture widths apart, fovea at most nearly three-fourths as wide as the ocellocular line is long, separated from the eye margin near the upper end by a sloping, nearly bare, punctured band that is in width : ocellocular line :: 1 : 13, fovea decidedly constricted near its middle where it is apparently less than half as wide as the greatest width of the fovea, the latter continued below the constriction as a narrowing furrow down to a point apparently a little below the clypeal line, upper half of fovea brownish, lower half pale ochreous, fovearea widest a little below the middle of the fovea and at its widest point angulated and nearly as wide as the upper end of the narrowest part of the fovea, fovearea polished and with a few large punctures, face polished and with large adjoining and nearly adjoining punctures, clypeus decidedly elevated above the apical margin, convex, polished and punctured much like the face except that laterally some of the punctures are confluent, clypearea present on the apical two-thirds of the clypeus, the latter thinly hairy, its surface not at all hidden by hairs, labrarea truncate, apparently exactly three times as wide at base as long down the middle and nearly half as wide at apex as at base, labrarea at base nearly two-thirds as wide as the labrum, the latter with a fringe of golden brown hairs, malar line : joint 3 of antennæ :: 1.5 : 7, the elevated portion nearly as long as the depressed portion, joint 3 of antennæ : 4 + 5 :: 7 : 9, joints 4 and 5 nearly as long as thick, the succeeding joints longer than thick, antennæ blackish throughout, mandibles typical, robust, not quite extending to

the outer edge of the labrum, black except for part of the apical half which is dark reddish, palpi slender, nearly typical; *thorax* with a velvety covering of coarse pale ochreous hairs except on the dorsulum where the posterior half inside the notauli is mostly covered with coarse blackish hairs, dorsulum polished, partly indistinctly reticulated, coarsely punctured, the punctures ranging from confluent to one puncture width apart, notauli represented by an impressed shining line, mesopleuræ with pale ochreous hairs, coarsely sculptured somewhat like the metanotum but with larger, more distinct punctures, scutell hairy and sculptured like the anterior third of the dorsulum, metanotum with hairs like on the scutell, but more densely hairy, dullish and with its punctures less distinct and closer together, tegulæ blackish except for a polished, brownish stramineous portion, wing base blackish, subcosta blackish, costa blackish stramineous, stigma dark reddish brown with a blackish tinge, rest of veins blackish stramineous but not so dark as the costa, first recurrent vein received by the second submarginal cell beyond the middle and nearer to the second transverse cubitus than the first transverse cubitus is to the stigma on the radial vein, nervulus received by the median cell, nearly interstitial and forming an acute angle with the second abscissa of the median vein, legs black and blackish brown, claws mostly pale brown, legs covered with pale ochreous hairs except on the tibiæ and tarsi where it is darker, rather pale brownish, scopa typical, its hairs pale ochreous except at base above where they are dark brown, mid metatarsi at most apparently as wide as hind metatarsi; *propodeum* with its enclosure sharply defined especially posteriorly where its truncature is bounded by a carina, finely reticulate and in addition traversed by at least seventeen longitudinal crooked carinæ, rest of upper aspect of propodeum appearing to be coarsely reticulate and covered with pale ochreous hairs, pleuræ of propodeum with sparse shallow excavations that are finely reticulated and almost hidden by the pale ochreous propodeal floccus; *abdomen* with its tergum polished, punctured, the punctures clear cut, adjoining on the elevated basal portions of the second, third and fourth tergites, usually one puncture width or a little more apart on the first tergite and on the depressed portion of the second, third and fourth tergites, second tergite with its elevated portion down the middle : depressed portion :: 10 : 15, fifth tergite with adjoining or nearly adjoining punctures and reticulate, pygidium blackish, slightly convex, nearly pointed, with an elevated enclosure, tergum with inconspicuous

blackish hairs except at base and laterally where there are some pale hairs, second, third and fourth tergites with a medially interrupted white hair band, fimbria blackish brown.

Other Localities.—California, one paratype with a written n on the locality label, nothing more [Acad. Nat. Sci. Phila.]; one paratype, Fallen Leaf Lake, California, June 21, 1915 (A. K. Fisher) [U. S. Biological Survey].